

EXHIBIT 2: Negative Declaration and Initial Study



City of Santa Barbara California

Notice of Determination

To: ☒ Office of Planning and Research
P.O. Box 3044
Sacramento, CA 95812-3044
(via Certified mail)

From: City of Santa Barbara
Planning Division
Post Office Box 1990
Santa Barbara, CA 93102-1990

☒ County Clerk of the Board
County of Santa Barbara

Subject: Filing of Notice of Determination in compliance with Section 21108 or 21152 of the Public Resources Code.

Project Title

Goleta Slough Tidal Circulation Experiment

State Clearinghouse Number
(If submitted to Clearinghouse)

Lead Agency Contact Person

Area Code/Telephone/Extension

2003101079

Laurie Owens, Airport Planner

(805) 692-6023

Project Location

500 Fowler Road, City of Santa Barbara, County of Santa Barbara

Project Description: The Airport is proposing to implement a short-term field experiment in the Goleta Slough to assess the feasibility of a long-term tidal restoration program. The proposed field experiment would involve creating two small tidal basins by excavating portions of larger non-tidal basins, and installing culverts that connect to tidal channels. Each experimental basin would be located adjacent to a "control basin" (i.e., an existing non-tidal basin) to allow a comparison of the hydrologic and ecological effects of tidal circulation with existing conditions. This experimental design would also allow a comparison of bird use in tidal and non-tidal areas to assess the effects on the bird strike conditions at the Airport. The experimental tidal basins could be restored to pre-project conditions if the results of the experiment are not favorable, such as increased aviation bird strike hazard or failure to establish the desired ecological conditions. The effects on bird strike hazard conditions at the Airport would be monitored during the field experiment to detect any adverse trends. The field experiment includes a contingency plan to immediately terminate the experiment if significant bird strike hazards arise attributable to the field experiment. The proposed experimental tidal basins would be constructed during the period of August through November 2004. The field experiment would end in November 2006, unless the experiment is either terminated early due to public safety concerns or continued for a longer period to collect additional data.

This is to advise that the City of Santa Barbara Planning Commission made decisions relative to the above-described project on December 4, 2003 and has made the following determinations regarding the above-described project:

1. The project will not have a significant effect on the environment.
2. An Initial Study and Final Mitigated Negative Declaration were prepared for this project pursuant to the provisions of CEQA. The Initial Study and Final Mitigated Negative Declaration and record of project approval may be examined at the City of Santa Barbara Community Development Department, Planning Division located at 630 Garden Street, Santa Barbara.
3. Mitigation measures have been made part of the project.
4. Statements of Overriding Considerations were not adopted for this project.
5. Findings were made pursuant to the provisions of CEQA.

Laurie Owens
Signature (Public Agency)

12/12/03
Date

Project Planner
Title

Project No.: MST2003-00705

APN: 073-045-003

Zone: G-S-R/S-D-3



**CITY OF SANTA BARBARA
COMMUNITY DEVELOPMENT DEPARTMENT
FINAL NEGATIVE DECLARATION – MST2003-00705**

Pursuant to the State of California Public Resources Code and the "Guidelines for Implementation of the California Environmental Quality Act of 1970," as amended to date, this Final Negative Declaration has been prepared for the following project:

PROJECT LOCATION: Santa Barbara Airport, 500 James Fowler Road, Santa Barbara, CA 93117

PROJECT PROPONENT: City Of Santa Barbara

PROJECT DESCRIPTION: The Airport is proposing to implement a short-term field experiment in the Goleta Slough to assess the feasibility of a long-term tidal restoration program. The proposed field experiment would involve creating two small tidal basins by excavating portions of larger non-tidal basins, and installing culverts that connect to tidal channels. Each experimental basin would be located adjacent to a "control basin" (i.e., an existing non-tidal basin) to allow a comparison of the hydrologic and ecological effects of tidal circulation with existing conditions. This experimental design would also allow a comparison of bird use in tidal and non-tidal areas to assess the effects on the bird strike conditions at the Airport.

The experimental tidal basins could be restored to pre-project conditions if the results of the experiment are not favorable, such as increased aviation bird strike hazard or failure to establish the desired ecological conditions. The effects on bird strike hazard conditions at the Airport would be monitored during the field experiment to detect any adverse trends. The field experiment includes a contingency plan to immediately terminate the experiment if significant bird strike hazards arise attributable to the field experiment.

The proposed experimental tidal basins would be constructed during the period of August through November 2004. The field experiment would end in November 2006, unless the experiment is either terminated early due to public safety concerns or continued for a longer period to collect additional data.

NEGATIVE DECLARATION FINDING:

Based on the attached Initial Study prepared for the proposed project, it has been determined that the proposed project will not have a significant effect on the environment.

Environmental Analyst

Date

11/24/2003

**CITY OF SANTA BARBARA
COMMUNITY DEVELOPMENT DEPARTMENT
PLANNING DIVISION**

INITIAL STUDY/ENVIRONMENTAL CHECKLIST MST2003-00705

PROJECT TITLE: TIDAL CIRCULATION EXPERIMENT

This Initial Study has been completed for the project described below because the project is subject to review under the California Environmental Quality Act (CEQA) and was determined not to be exempt from the requirement for the preparation of an environmental document. The information, analysis and conclusions contained in this Initial Study are the basis for deciding whether a Negative Declaration (ND) is to be prepared or if preparation of an Environmental Impact Report (EIR) is required to further analyze impacts. Additionally, if preparation of an EIR is required, the Initial Study is used to focus the EIR on the effects determined to be potentially significant.

PROJECT DESCRIPTION (See Site Plan, Exhibit 1)

The Airport is proposing to implement a short-term field experiment in the Goleta Slough to assess the feasibility of a long-term tidal restoration program. The Goleta Slough currently includes tidal and formerly tidal salt marsh, stream channels, mud and sand flats and transitional wetland-to-upland and estuarine-to-freshwater habitats (Draft Goleta Slough Ecosystem Management Plan, 1997). Over 60 percent of the original estuarine wetlands have been eliminated or isolated from tidal action over the past century due to ditching, diking, and filling from agricultural operations, construction of the Marine Corps Air Station (which later became Santa Barbara Airport) and the University of California, from flood control activities, and through gradual accumulation of sediment in the Slough.

The Draft Goleta Slough Ecosystem Management Plan recommends restoring tidal circulation to historic tidal wetlands to restore the Slough's natural diversity of resources, habitats, physical processes and functions that have been lost or degraded. Efforts to restore tidal circulation to portions of Goleta Slough have been proposed on a number of occasions. However, the Federal Aviation Administration (FAA) and the Airport have expressed concerns that restoring tidal circulation could modify bird activity near the airfield and possibly increase aviation bird strike hazards.

Consistent with the recommendations of the Draft Goleta Slough Ecological Management Plan, the field experiment would provide a solid scientific foundation for assessing the feasibility of future tidal restoration activities in Goleta Slough. The experiment would be monitored for at least two years to evaluate the success in establishing the desired tidal habitats, to develop potential site design, implementation and maintenance strategies for future restoration efforts, and to determine the potential effects of habitat changes on aviation bird strike hazards. The proposed experimental design has been reviewed by the Federal Aviation Administration (FAA) and U.S. Department of Agriculture – Animal and Plant Health Inspection Services (USDA-APHIS) Wildlife Services Division who have commented that they have no objection to the proposed experiment.

The proposed field experiment would involve creating two small tidal basins by excavating portions of larger non-tidal basins, and installing culverts that connect to tidal channels. Each experimental basin would be located adjacent to a "control basin" (i.e., an existing non-tidal basin) to allow a comparison of the hydrologic and ecological effects of tidal circulation with existing conditions. This experimental design would also allow a comparison of bird use in tidal and non-tidal areas to assess the effects on the bird strike conditions at the Airport.

Project grading would involve 3,979 cubic yards of cut and 353 cubic yards of fill in Basin E/F and 8,641 cubic yards of cut and 885 cubic yards of fill in Basin L/M for a total of 12,620 cubic yards of cut and 1,220 cubic yards of fill. The exported material would be utilized in one of three ways: (1) it would be evaluated for its suitability as material for beach replenishment; (2) the Contractor would locate a suitable, permitted development site to accept the fill; or (3) it would be transported to Tajiguas Landfill to be used as clean cover fill.

The experimental tidal basins could be restored to pre-project conditions if the results of the experiment are not favorable, such as increased aviation bird strike hazard or failure to establish the desired ecological conditions. The effects on bird strike hazard conditions at the Airport would be monitored during the field experiment to detect any adverse trends. The field experiment includes a contingency plan to immediately terminate the experiment if significant bird strike hazards arise attributable to the field experiment.

The proposed experimental tidal basins would be constructed during the period of August through November 2004. The field experiment would end in November 2006, unless the experiment is either terminated early due to public safety concerns or continued for a longer period to collect additional data.

Non-tidal basins for the experiment were identified based on the following criteria. The basins that met these criteria were basins E/F and L/M.

- Historically tidal area, now altered by diking or tide gates;
- Previously identified as potential sites for tidal restoration;
- Potential location for long-term tidal restoration;
- Easy access for vehicles, including heavy equipment;
- Proximity to a non-tidal basin or sub-basin where freshwater impounds which can be used as a control basin;
- Requires minimal ground disturbance;
- Includes a range of distances from the airfield;
- Does not include a basin with unique habitat features or wildlife values (e.g., Basins J and K); and
- Located on Airport property.

Basin E/F

A 2.02-acre experimental basin would be constructed within the southwest corner of Basin E/F, which is approximately 13 acres in size. A 20-foot wide tidal channel would be excavated to about 4 feet elevation in the center of the experimental basin, which would match the bottom elevation of Tecolotito Creek, thereby allowing the fullest range of tide elevations possible. The remainder of the experimental basin would generally vary between 5 and 6 feet elevation. Grading would involve 3,979 cubic yards of cut and 353 cubic yards of fill.

In the winter, when the mouth of Goleta Slough is open, the low tide is at or below 0 feet elevation. Hence, this basin would drain to Tecolotito Creek during low tide events unless the creek is full with runoff from the watershed. During the summer, when the mouth of Goleta Slough is closed, the lowest tide elevation during the day is typically 3.5 to 4 feet. Theoretically, the basin would drain each day. However, due to the high attenuation of tides in the summer, it is likely that a small amount of water would remain in the bottom channel of the basin, up to 4.5 feet elevation.

A 36-inch diameter pipe would be installed in the berm along Tecolotito Creek, providing a tidal connection. The culvert would be about 55 feet in length. The berm would be temporarily excavated to a depth of 8 feet with 2:1 (H:V) side slopes to place the culvert. The trench would be backfilled with a high-clay soil mixture to prevent seepage. A one-foot thick layer of 4-inch minus gravel would be placed below the culvert to stabilize

the subgrade. An aluminum canal slide gate would be installed on the upstream end of the culvert to close the basin to tidal inflows, and/or to control the rate of tidal exchange if so desired during the course of the experiment.

During construction, a cofferdam would be installed at the outlet of the proposed culvert in Tecolotito Creek to facilitate installation of the culvert. A portable steel frame cofferdam with a fabric barrier would be used. The frames would be lowered into the creek with a small crane, then the fabric would be placed on the outside surface. Water would be pumped from the berm side of the cofferdam to create a dry space. The cofferdam would not block flows in Tecolotito Creek. The void behind the cofferdam would need to be dewatered on a continuous basis during the culvert installation operations, using a portable gas generator.

A low, 40-foot wide earthen berm would be constructed on the north and east sides of the experimental basin using onsite materials. The top of the berms would have a 20-foot wide flat surface to provide vehicle access in emergencies only. The 10-foot wide slopes would have a 10:1 (H:V) grade. The berms would require about 12 inches of fill.

Construction access to the site would be accomplished along a 15-foot wide vehicle corridor on the south and west berms. This corridor would not be graded. Instead, the existing vegetation would be crushed by vehicle tires, then lightly groomed with a small backhoe to remove hummocks or fill voids. During construction, vehicles would drive over the crushed layer of existing vegetation, which is expected to recover naturally.

Following construction, the temporary vehicle corridor on the west and south berms would be seeded with low-growing native perennial plants from Goleta Slough to reduce erosion and prevent colonization by weeds. This corridor would be maintained following construction to allow overland travel by vehicles to access the culvert during emergencies. Hence, compacted tire tracks would be allowed. Except in emergencies, all access to the basin and culvert would be accomplished on foot.

Construction equipment would access the basin at a single ramp on the west berm in order to avoid disturbance to the other berms. A 25-foot wide temporary construction zone would be established around the perimeter of the basin where grading would be prohibited, but overland travel by construction equipment during grading would be allowed.

During the clearing and grubbing of the experimental basin, the Airport would collect all pickleweed vegetation (stems and roots) and temporarily store this material in the construction staging area near the bunker west of Basin G and south of Runway 7-25. The material would be windrowed and watered while grading is completed. Upon completion of grading, the pickleweed material would be broken into small pieces (6 inches lengths) and lightly turned into the soils of the basin above elevation 5 feet. Pickleweed readily sprouts from stem and root cuttings and would be expected to quickly establish as the winter progresses. No irrigation is planned for the basin bottom, but it would be regularly weeded by hand. No pickleweed would be placed in the tidal channel in the center of the basin, which would be inundated most of the time.

The sides and tops of the north and east berms, and the basin slopes between 6 and 7 feet elevation (encompassing about 0.9 acre) would be seeded with the following plants using seeds collected from the Safety Area Grading mitigation site during the period November 2003 through November 2004:

Alkali heath (*Frankenia salina*)

Alkali weed (*Cressa truxillensis*)

Pickleweed (*Salicornia virginica*)

Salt marsh sand spurry (*Spergularia marina* or *macrotheca*)

The amount of seed collected would depend upon the available seed crop. A total of 27 pounds are required to meet the seeding rate of 30 lbs per acre for the new berms at Basin E/F. Seeds would be broadcast over the tops and slopes of the berms, then disked to a depth of 1-2 inches using a small tractor. When the seeds are being turned under, fresh pickleweed stems would also be included, derived from cuttings from the basins. The seeded areas would not be irrigated. Seeding would occur in December 2004, immediately prior to the winter rains. It is anticipated that the above species would become established by natural rainfall during the course of the field experiment, and that a more natural restoration process without the use of irrigation would minimize weed colonization and facilitate establishment of the most suitable mix of species. The vehicle corridor along the west and south berms and the temporary ramp to the basin would be seeded in a similar manner. However, the 25-foot wide temporary construction disturbance zone outside the north and east berms would be allowed to revegetate naturally due to the proximity of pickleweed vegetation.

Silt fences would be placed around the work areas at the basin. Post construction erosion on the basin slopes would be managed by the use of erosion control blankets (i.e., coconut fiber mesh), as well as the proposed pickleweed cuttings.

Basin L/M

A 2.66-acre experimental basin would be constructed in the southeast corner of Basin L/M, which measures approximately 17 acres in total. A 20-foot wide channel would be excavated with an invert elevation of 2.5 feet in the center of the basin. This channel would match the bottom elevation of Mesa Road Ditch to allow a full range of tide elevations. Grading would involve 8,641 cubic yards of cut and 885 cubic yards of fill. Unlike Basin E/F, a berm would not be constructed to create the basin. The remainder of the basin would be between 4 and 5 feet elevation. This basin is expected to drain completely each day during both the summer and winter.

In order to allow vehicular access to the basin, a berm must be constructed from the north side of Basin L/M. A 470-foot long, 40-foot wide earthen berm would be constructed across the center of the basin, roughly along an existing topographic ridge. The berm would tie into higher elevations areas at the north and south ends. The top of the berm would have a 20-foot wide flat surface. It would have a 1-foot thick layer of 6-inch rock to provide a subgrade for all-weather access. The 10-foot wide slopes would have a 10:1 (H:V) grade. The berm would require about 12 to 24 inches of fill.

A ~~36-48~~-inch diameter pipe and slide gate would be installed in the berm along Mesa Road Ditch, in the same manner as described for Basin E/F. The culvert would be about 45 feet in length. The berm would be temporarily excavated to a depth of 9 feet with 2:1 (H:V) side slopes to place the culvert. A different cofferdam system would be used on Mesa Road Ditch that would be much smaller than that proposed at Tecolotito Creek for Basin E/F. Two sandbag cofferdams would be manually placed in the ditch on each side of the proposed culvert outlet. A sump pump would bypass flows from the west. The void behind the cofferdam would be dewatered on a continuous basis during the culvert installation operations, using a portable gas pump generator.

Access to the site during construction would be accomplished along a 15-foot wide corridor on the north berm, and then along the new berm across the basin. The corridor on the north berm would not be graded. Existing vegetation would be crushed by vehicle tires, then lightly groomed with a small backhoe to remove hummocks or fill voids. During construction, vehicles would drive over the crushed layer of existing vegetation.

Following construction, the temporary vehicle corridor on the north berm would be seeded with low-growing native perennial plants from Goleta Slough to reduce erosion and prevent colonization by weeds. The corridor would be maintained to allow overland travel by vehicles to access the basin and culvert during emergencies. Except in the cases of emergencies, all access to the basin and culvert would be accomplished on foot either from the north or south berm.

A 25-foot wide temporary construction zone would be established around the perimeter of the basin where grading would be prohibited, but overland travel by construction equipment during grading would be allowed.

During the clearing and grubbing of the experimental basin, the Airport would collect all pickleweed vegetation (stems and roots) and temporarily store this material in a construction staging area on property owned by the California Department of Fish and Game west of Basin L/M. The Airport would acquire a temporary construction easement to store the plant material on flat upland areas where it can be windrowed and watered while grading is completed. Upon completion of grading, the pickleweed material would be broken into small pieces (6 inches lengths) and lightly turned into the soils of the basin above elevation 4 feet.

The sides and tops of the access berm (about 0.4 acre) would be seeded with the same plant mix and in the same manner as Basin E/F. A total of 12 pounds are required to meet the seeding rate of 30 lbs per acre for the access berm at Basin L/M. Silt fences and other erosion control measures would be implemented in the same manner as Basin E/F.

Maintenance and Monitoring

A maintenance and monitoring program would be implemented by the Airport for the duration of the experiment. Routine maintenance would include the following tasks:

- Inspections of the culvert and slide gate to detect any blockage, sediment build-up, or erosion at the inlet or outlet.
- Removal of obstructing vegetation, debris, and sediment from the inlet and outlet of the culverts.
- Weeding of the basins, including berms, to reduce non-native weeds and facilitate revegetation of construction disturbed areas with native wetland plants.
- Re-planting of the revegetated portions of the berms and basin to increase native plant cover in the event that the initial seeding is not adequate.

In addition, the field experiment would be monitored to assess performance (i.e., are the habitat and hydraulic objectives being met) and if creating tidal conditions increases bird strike hazards compared to conditions in non-tidal basins.

Weeding would be performed on an as needed basis to comply with the performance standards. Weeding would occur at least six times per year, or more frequently, if necessary. Weeding would be performed primarily by hand methods, including hand-held weed whips. Herbicides would be used only when manual methods are not effective.

The restoration performance criteria are as follows: (1) Native plant cover must be at least 33 percent at the end of 2 years, and demonstrate evidence of ongoing and future expansion; and (2) Non-native invasive weeds must remain below 15 percent of the total vegetative cover at all times during the experiment.

Formal site inspections to monitor progress towards the performance criteria would be conducted six times a year during the field experiment. Native plant and weed cover would be calculated during each visit to determine if the performance criteria are being met, or likely to be met, at the end of Year 2.

The Airport would prepare annual revegetation status report on the condition of the seeded areas during the field experiment. Annual reports would be completed by December 1st of each year. The annual revegetation monitoring period would be from January through September. The annual reports would contain a quantitative analysis of attainment of performance standards. In the event that performance criteria are not being met, the Airport would re-seed the affected areas and initiate a new maintenance and monitoring program.

In order to make observations of the experimental basins, control basins, and airfield, temporary wooden observation structures would be placed at the southwest corner of each experimental basin. These wooden structures would provide sufficient height to observe birds in and near the basins, and would also provide a blind. The structure at Basin E/F would be 3 feet high, while the structure at Basin L/M would be 6 feet high. They would be freestanding, unpainted wooden structures that are custom made for the project and would be removed following completion of the experiment.

Suspension and Termination of the Experimental Basins

If it were necessary to suspend the experiment, tidal exchange in the experimental basins would be shut off within hours by mechanically closing the gates. If it is desirable to close the tidal connection while the basin is in a dewatered state, the Airport would wait for the next low tide to evacuate the basin, and then close the gate. Up to 12 hours may be necessary to establish a closed and dewatered basin when relying on natural tide action. If it were necessary to temporarily suspend the field experiment independent of the tide level, the Airport would close the gates and then pump water from the basin using a portable sump pump and generator. Airport staff would be responsible for closing the gates upon instruction by the Airport Director.

If there are unique bird strike hazard problems (such as a group of migrant waterfowl that take up temporary residence in the slough) in an experimental basin that can be controlled by hazing techniques (e.g., noise, surfactants, decoys, and shotshells), then the Airport would use these methods as interim measures until the bird attractant in the basin has been removed.

If the experiment is permanently terminated, the Airport would restore the experimental basins to their pre-project conditions. The slide gates would be removed and the culverts would be plugged with concrete. The basins would be backfilled with imported clean fill with a soil texture that matches the existing soil conditions. Construction work would follow previous procedures relative to access and work areas. Berms would be removed and the basins would be filled until the basin resembles pre-project grade. It is anticipated that backfilling could require at least 2-3 weeks in order to retain a contractor and suitable material. Once the basin has been filled to pre-construction grade, the Airport would turn under pickleweed stems derived from Goleta Slough using a small tractor. Stems and roots of this abundant plant would sprout and create the pickleweed cover that was present prior to the experiment. Berms would be seeded with native shrubs. It is likely that full restoration of the basins with complete pickleweed cover and restored berms would be accomplished within two years.

APPLICANT/PROPERTY OWNER NAME AND ADDRESS

City of Santa Barbara Airport
601 Norman Firestone Road
Santa Barbara. CA 93117

PROJECT ADDRESS/LOCATION (See Vicinity Map, Exhibit 2)

City of Santa Barbara Airport
500 James Fowler Road
Santa Barbara, CA 93117

The proposed experimental basins are located in Goleta Slough south of the main runway (Runway 7/25).

ENVIRONMENTAL SETTING

The Santa Barbara Airport property consists of approximately 830 acres and includes a developed commercial/industrial area north of Hollister Avenue and the Airfield and Goleta Slough south of Hollister Avenue. The University of California at Santa Barbara is located directly to the Southwest of the Airport. The

Airport is also adjacent to the recently incorporated City of Goleta. The experiment will be located within portions of two non-tidal basins in Goleta Slough south of the Airfield – Basins E/F and L/M (Exhibit 1).

Basin E/F is a 13-acre basin located adjacent to Taxiway A (Exhibit 1). The berm on the west side of the basin is a remnant of Adams Road, and contains a sewer line that extends across Tecolotito Creek to Goleta West Sanitary District (Exhibit 2). The top of the berm contained an asphalt road, which was removed and restored to native habitat in 2000. The basin is accessed by a gravel service road between Taxiway A and the north side of the basin.

Basin E/F previously had a low berm in the middle that was removed in 2000 as part of the Safety Area Grading restoration project, allowing free movement between the two low-lying areas of the basin (Exhibit 2). The bottom elevations of the basin range from 5.5 to 7 feet. The basin is connected to Tecolotito Creek through a 24-inch diameter culvert in the south berm. The invert elevation of the culvert is 4 feet, which would theoretically allow tidal inflow and outflow. (Note: all tide elevations in this document are relative to Mean Lower Low Water [MLLW], which is nearly equivalent to the topographic map datum of NAVD 88). However, sediment deposits block the inlet to the culvert. As a result, this basin usually only has freshwater derived from stormwater runoff that discharges to the basin from a storm drain on the north side of the basin. The northwest corner of the basin is lower than the rest of the basin. It collects precipitation and runoff which can persist for months during wet years while the remainder of the basin is dry.

Basin L/M is located on the south side of Tecolotito Creek and encompasses about 16.9 acres (Exhibit 1). It is a single unit, but has two major “cells” in the southwest and southeast corners of the basin created by a small ridge in the middle of the basin (Exhibit 1). These low-lying areas collect precipitation and are typically ponded for many months of the year. The bottom elevations of the basin range from 5.5 to 6 feet.

Adams Road creates the berm on the west side of the basin. Access to this basin is available from two gates on the east side of Adams Road. The north and east berms are located along Tecolotito Creek. The south side of the basin contains a small berm adjacent to Mesa Road Ditch. There is a small opening to the basin on the south side that is about four feet wide. The invert of the channel is about 4 feet, sufficient to allow tidal circulation. However, sediment deposits on the inlet of the channel (up to 7 feet elevation) block all but the extreme high tides. As a result, this basin is usually only filled with freshwater derived from direct precipitation.

PROPERTY CHARACTERISTICS

Assessor's Parcel Number:	073-080-33 and a portion of 073-080-37	General Plan Designation:	Recreational Open Space
Zoning:	G-S-R (Goleta Slough Reserve)	Parcel Size:	Entire Airport is 952 acres; Goleta Sough is 400 acres; experimental basins total approximately 30 acres
Existing Land Use:	Goleta Slough	Proposed Land Use:	Same
Slope:		Generally level, approximately 5.5 feet above mean sea level (MSL), gradually sloping toward Pacific Ocean	
Surrounding Land Uses:			
North:	Airport		
South:	University of California, Santa Barbara		
East:	Airport		
West:	City of Goleta Industrial, Residential		

PLANS AND POLICY DISCUSSION

The entire project is located inside the City of Santa Barbara limits and is currently subject to City development policies and regulations. The project area is completely within the California Coastal Commission's permanent jurisdiction of the Coastal Zone. Development of this area is guided by the existing State Coastal Act, the City General Plan, and Airport and Goleta Slough Local Coastal Program development policies and regulations.

The experiment would require approval of a Coastal Development Permit (CDP) from the California Coastal Commission. Prior to filing an application with the Coastal Commission, the City of Santa Barbara Planning Commission would make a recommendation to the Coastal Commission on the proposed CDP. The experiment would also require a Streambed Alteration Agreement from the California Department of Fish and Game (DFG), a Clean Water Act (CWA) Section 404 Permit from the U.S. Army Corps of Engineers, and a CWA Section 401 certification and National Pollution Discharge Elimination System (NPDES) Waste Discharge Requirement permit for dewatering operations from the Regional Water Quality Control Board (RWQCB).

The proposed project appears consistent with the Airport and Goleta Slough Local Coastal Program (LCP), which requires the Tidal Circulation Experiment per Policy C-11. Depending on its outcome, the Experiment will determine the feasibility of restoring tidal circulation to portions of Goleta Slough and thus may lead to future tidal restoration projects. The Experiment therefore appears consistent with Coastal Act Section 30230, which states that marine resources shall be maintained, enhanced, and where feasible, restored. The Experiment also appears consistent with Section 30233 of the Coastal Act, which limits substantial alteration of wetlands to necessary water and flood control projects and improvement of fish and wildlife habitat.

The project also appears consistent with the Draft Goleta Slough Ecological Management Plan (GSEMP) pursuant to LCP Policy C-10. The Draft GSEMP recommends restoring tidal circulation to historic tidal wetlands to restore the Slough's natural diversity of resources, habitats, physical processes and functions that

have been lost or degraded. Specifically, GSEMP Action R-1.1 identifies restoration of tidal circulation and increasing habitat diversity by restoring tidal mud flats and high marsh habitats as priorities of the GSEMP.

Additional analysis of the project's consistency with City plans and policies would be included in the Staff Report prepared for the Planning Commission's recommendations to the California Coastal Commission. The California Coastal Commission will make the final determination of the project's consistency with the plans and policies as part of approval of the Coastal Development Permit.

MITIGATION MONITORING AND REPORTING PROGRAM (MMRP)

A Mitigation Monitoring and Reporting Program has been prepared for the subject project in compliance with Public Resources Code §21081.6. The MMRP is attached herewith as Exhibit 3.

ENVIRONMENTAL CHECKLIST

The following checklist contains questions concerning potential changes to the environment that may result if this project is implemented. If no impact would occur, **NO** should be checked. If the project might result in an impact, check **YES** indicating the potential level of significance as follows:

Known Significant: Known significant environmental impacts. Further review needed to determine if there are feasible mitigation measures and/or alternatives to reduce the impact.

Potentially Significant: Unknown, potentially significant impacts which need further review to determine significance level.

Significant, avoidable: Potentially significant impacts which can be mitigated to less than significant levels.

Less Than Significant: Impacts which are not considered significant.

1. AESTHETICS. Could the project:	NO	YES
		Level of Significance
a) Affect a public scenic vista or designated scenic highway or highway/roadway eligible for designation as a scenic highway?	✓	
b) Have a demonstrable negative aesthetic effect in that it is inconsistent with Architectural Board of Review or Historic Landmarks Guidelines or guidelines/criteria adopted as part of the Local Coastal Program?	✓	
c) Create light or glare?	✓	

Discussion:

1.a.-c. The project would involve approximately 13,858 cubic yards of grading to lower the elevation of the experimental basins and allow tidal circulation. The experimental basins are not visible from public viewing places or scenic highways. The proposed experiment would be consistent with Architectural Board of Review

(ABR) guidelines or Local Coastal Program (LCP) aesthetic criteria. No lighting would be associated with the project. **No impacts** to aesthetic resources would result from the experiment.

Residual Impact: None.

2. AIR QUALITY. Could the project:	NO	YES
		Level of Significance
a) Violate any air quality standard or contribute to an existing or projected air quality violation?		Potentially significant, avoidable
b) Expose sensitive receptors to pollutants?	✓	
c) Create objectionable odors?	✓	
Is the project consistent with the County of Santa Barbara Air Quality Attainment Plan? Yes		

Discussion:

The Federal Clean Air Act Amendments of 1970 established National Ambient Air Quality Standards (NAAQS) for six “criteria pollutants”. These include photochemical ozone, carbon monoxide, sulfur dioxide, nitrogen dioxide, particulate matter, and lead. The California Clean Air Act of 1977 created stricter California Ambient Air Quality Standards (CAAQS) for the state. Additionally, the California Air Resources Board has designated areas of the state that are in attainment of nonattainment for the CAAQS. An area is in nonattainment for a pollutant if the applicable CAAQS for that pollutant has been exceeded more than once in three years.

For environmental review purposes, the City of Santa Barbara utilizes CAAQS, as these standards are more stringent than the NAAQS. Presently, the County of Santa Barbara is in nonattainment with CAAQS for ozone (O³) and particulate matter (PM₁₀). There are also heavily congested intersections within the City that may approach the California 1-hour standard of 20 parts per million for carbon monoxide (CO) during peak traffic hours.

The City of Santa Barbara uses the Santa Barbara Air Pollution Control District’s (APCD) thresholds of significance for air quality impacts. The APCD has determined that a proposed project will not have a significant air quality impact on the environment, if the operation of the project will:

- emit (from all project sources, both stationary and mobile) less than 240 pounds per day for ROC and NO_x (ozone is formed in the atmosphere through a series of photochemical reactions involving oxides of nitrogen [NO_x] and reactive organic compounds [ROC], referred to as ozone precursors, and sunlight occurring over a period of several hours), 80 pounds per day for PM₁₀ (sources of PM₁₀ include mineral quarries, grading demolition, agricultural tilling, road dust, and vehicle exhaust). For CO, the significance threshold may be triggered if the project contributes more than 800 peak hour trips to an individual intersection; and
- emit less than 25 pounds per day of ROC or NO_x from motor vehicle trips only; and
- not cause or contribute to a violation of any California or National Ambient Air Quality Standard (except ozone); and
- not exceed the APCD health risks, public notification thresholds adopted by the APCD Board; and

- be consistent with the adopted federal and state air quality plans for Santa Barbara.

2.a. Short Term (Construction):

Construction of the experiment would involve grading and landscaping activities over approximately a 2.5-month period in Fall 2004. In the event of experiment termination, site restoration would require grading and landscaping for a similar period. The mechanized equipment to be used would include an excavator or grade-all, backhoe, loader, and 10-cubic yard haul trucks. Earth-moving and restoration activities would cause localized dust generation that would potentially result in temporary nuisance effects to surrounding Airport tenants and users, and would contribute incremental increases in particulate matter (PM₁₀). Dust-related impacts are considered **potentially significant but avoidable** with application of standard dust control mitigation measures AQ-1 through AQ-4 identified below to minimize nuisance dust and particulates.

Construction equipment would also emit NO_x and ROC. The County of Santa Barbara considers all construction-related NO_x emissions in the County to represent approximately six percent of annual Countywide NO_x emissions and therefore construction related emissions are insignificant (1993 Santa Barbara County Rate of Progress Plan). In order for NO_x and ROC emissions from construction equipment to be a significant environmental impact, a proposed project would need to involve extensive use of construction equipment over an extended period of time. The average daily traffic to and from the basins (one way) would be about 10 trips per day. The estimated peak number of truck trips during hauling events would be 30 trucks per day. Due to the project's limited scope and duration, impacts would be **less than significant**. Short-term construction emissions from land development projects throughout the South Coast Air Basin have been assumed in the 1998 Clean Air Plan (CAP). Standard mitigation measures to reduce emissions from construction equipment are recommended below (AQ-5 through AQ-12).

Long-Term (Operational Emissions) Impacts: Long-term project emissions primarily stem from motor vehicles associated with projects and from stationary sources that may require permits from the APCD. The proposed project would not contain any stationary sources that require permits from APCD. The project is limited to construction and restoration of the experimental basins and vehicles trips would be limited to one vehicle per week for monitoring purposes.

2.b. Sensitive receptors are defined as children, elderly, or ill people who can be more adversely affected by air quality problems. Types of land uses typically associated with sensitive receptors include schools, parks, playgrounds, childcare centers, retirement homes, convalescent homes, hospitals, and clinics. Stationary sources are of particular concern to sensitive receptors. The project area is not near any sensitive receptors, thus **no impacts** from the project would result.

2.c. Objectionable Odors: The project would not contain any features with the potential to emit odorous emissions from sources such as cooking equipment, combustion or evaporation of fuels, sewer systems, or solvents and surface coatings. Thus, **no impacts** from objectionable odors would result.

Consistency with the Clean Air Plan: Consistency with land use and population forecasts in local and regional plans, including the Clean Air Plan (CAP) is required under CEQA for all projects. Proposed projects subject to 1994 CAP consistency determinations include a wide range of activities such as commercial, industrial, residential, and transportation projects. By definition, consistency with the CAP, means that direct and indirect emissions associated with the project are accounted for in the CAP's emissions growth assumptions and the project is consistent with policies adopted in the CAP. The CAP relies primarily on the land use and population projections provided by the Santa Barbara County Association of Governments and Air Resources Board on-road emissions forecast as a basis for vehicle emission forecasting. If a residential project provides for an increased population growth above that forecasted in the most recently adopted CAP, then the project is inconsistent with the CAP and may have a significant impact on air quality. If a commercial or industrial project does not incorporate appropriate CAP Transportation Control Measures, does not incorporate applicable

stationary source control measures, and/or is inconsistent with APCD rules and regulations, then the project is inconsistent with the CAP and may have a significant impact on air quality.

The proposed project would not involve new habitable buildings or population generation. The imposition of mitigation measures AQ-1 through -12 would ensure that the short-term construction impacts are **less than significant**. Emissions associated with the project are accounted for and the project is consistent with CAP.

Required Mitigation Measure(s):

AQ-1. During site grading and transportation of fill materials, regular water sprinkling shall occur. During clearing, grading, earth moving or excavation, sufficient quantities of water, through use of either water trucks or sprinkler systems, shall be applied to prevent dust from leaving the site. Each day, after construction activities cease, the entire area of disturbed soil shall be sufficiently moistened to create a crust but minimized so as to prevent runoff and ponding.

Throughout construction, water trucks or sprinkler systems shall also be used to keep all areas of vehicle movement damp enough to minimize dust generation. At a minimum, this will include wetting down such areas in the late morning and after work is completed for the day. Increased watering frequency will be required whenever the wind speed exceeds 15 mph.

AQ-2. Trucks transporting fill material to and from the site shall be covered from the point of origin.

AQ-3. The haul route(s) for all construction-related trucks, three tons or more, entering or exiting the site, shall be approved by the Transportation Engineer.

AQ-4. After clearing, grading, earth moving or excavation is completed, the entire area of disturbed soil shall be treated to prevent wind pickup of soil. This may be accomplished by:

- A. Sufficiently wetting the area down to form a crust on the surface with repeated soakings as necessary to maintain the crust and prevent dust pickup by the wind.
- B. Seeding and watering until grass cover is grown;
- C. Planting of native vegetation per plan;
- D. Hydroseeding with native seed mixture;
- E. Other methods approved in advance by the Air Pollution Control District.

Recommended Mitigation Measures:

AQ-5. Construction equipment shall be maintained in tune per the manufacturer's specifications.

AQ-6. Heavy-duty diesel-powered construction equipment manufactured after 1996 (with federally mandated "clean" diesel engines) shall be utilized wherever feasible.

AQ-7. The engine size of construction equipment shall be the minimum practical size.

AQ-8. The number of construction equipment operating simultaneously shall be minimized through efficient management practices to ensure that the smallest practical number is operating at any one time.

AQ-9. Catalytic converters shall be installed on gasoline-powered equipment, if feasible.

AQ-10. Diesel catalytic converters shall be installed, if available.

AQ-11. Diesel particulate emissions shall be reduced using EPA or California certified and or verified control technologies like particulate traps.

AQ-12. Diesel powered equipment shall be replaced by electric equipment whenever feasible.

Residual Impact: Short-term impacts involving construction dust and particulates would be mitigated to **less than significant levels** with implementation of Mitigation Measures AQ-1 through AQ-4. Recommended mitigation measure AQ-5 through AQ-12 would minimize construction equipment emissions.

3. BIOLOGICAL RESOURCES. Could the project result in impacts to:	NO	YES
		Level of Significance
a) Endangered, threatened or rare species or their habitats (including but not limited to plants, fish, insects, animals, and birds)?		Potentially significant, avoidable.
b) Locally designated historic, Landmark or specimen trees?	✓	
c) Natural communities (e.g. oak woodland, coastal habitat, etc.).		Potentially significant, avoidable.
d) Wetland habitat (e.g. marsh, riparian, and vernal pool)?		Potentially significant, avoidable.
e) Wildlife dispersal or migration corridors?		Less than significant.

Discussion:

3.a. Endangered, Threatened or Rare Species or Their Habitats

A variety of sensitive plant and wildlife species and their habitats occur in the Goleta Slough, and portions of Airport property. These species include ones designated as threatened or endangered by the state or federal government, or Species of Special Concern as designated by the California Department of Fish and Game. A description of sensitive species that could occur at and near Basins E/F and L/M, and along Tecolotito Creek, is provided below based on biological investigations of Goleta Slough associated with the Environmental Impact Report/Statement for the Aviation Facilities Plan (2002), as well as specific field investigations of the basins by URS contained in the Biological Report prepared for this project (Exhibit 4). Sensitive species include species designated as threatened or endangered by the state or federal government, or Species of Special Concern, as designated by the California Department of Fish and Game.

Southern Steelhead

The southern steelhead trout is designated an endangered species along the South Coast by the National Marine Fisheries Service (NMFS). There are recent incidental observations of steelhead in many South Coast streams such as Carpinteria, Montecito, and Mission creeks. There is documented evidence on Mission Creek of spawning. There have been anecdotal sightings of steelhead on upper San Jose Creek, and confirmed sightings on Atascadero and Maria Ygnacio creeks in the past several years. The latter sightings indicate that steelhead

can move into lower Goleta Slough. However, there have been no sightings or historic records of steelhead along Carneros, San Pedro, and Tecolotito creeks.

It would be possible for transitory, individual adult steelhead to attempt to migrate upstream in Tecolotito Creek, however, this occurrence would be considered very unlikely. There are numerous passage impediments upstream of Hollister Avenue. Suitable spawning habitat may be present in Glen Annie Creek; however, summer rearing habitat appears to be limited or absent. Based on this information, steelhead would not be expected to occur along Tecolotito Creek in or above Goleta Slough, as concluded in the Biological Assessment for the Aviation Facilities Plan (URS Corporation, 2001) for NMFS. Therefore, the project would result in a **less than significant impact** on Southern Steelhead. Impacts can be further reduced with the implementation of required mitigation measure BIO-2, which restricts construction to the dry season outside of bird breeding season (July 15 to November 1), since this is the time when any possible migration of steelhead is least likely to occur.

Tidewater Goby

The tidewater goby is designated an endangered species by the US Fish and Wildlife Service. It occurs in coastal brackish lagoons along the central and southern California coast. Local resident populations are present at the mouths of Gaviota, Arroyo Burro, and Mission creeks, among others. Although the tidewater goby was reported to be present in Goleta Slough in the 1970s, there was no confirmed evidence. Field investigations in the 1980s and 1990s failed to detect its presence. This species is presumed to be absent from Goleta Slough, as concluded in the Biological Assessment for the Airport Facilities Plan (SAIC, 2001) for USFWS. Thus, no impacts to the Tidewater Goby would result from this project.

Belding Savannah Sparrow

Belding's Savannah Sparrow (*Passerculus sandwichensis beldingi*) is a subspecies of the widespread savannah sparrow that breeds in coastal salt marshes from northwestern Mexico to southern California, and as far north as Goleta. This subspecies was listed as endangered by the California Department of Fish and Game in 1974 and is a federal Species of Concern. However, the federal designation affords the species no protection under the federal Endangered Species Act.

The sparrow is a resident of *Salicornia* (pickleweed) marshes and utilizes pickleweed marsh for nesting, perching, and singing. The species typically nests in the upper littoral zone of tidal pickleweed marshes, where their nests are safe from the highest tides that occur during the nesting season. In Goleta Slough, where many of the basins are non-tidal, the birds establish nesting territories above the water line created by the freshwater impoundments resulting from precipitation.

The construction of the proposed experimental basins would convert approximately 2.25 acres of pickleweed marsh habitat in Basin L/M that is suitable for nesting (due to its high elevation) to mudflat or pickleweed marsh habitat that would be subject to tidal inundation and would not be suitable for nesting. The potential number of nesting birds that may be displaced by this activity is not known because the number of birds in a given area varies widely from year to year. The number of territories has ranged from a low of 72 in 1992 to a high of 140 territories in 1994 (Holmgren and Kisner, 1994) throughout the 150 acres of pickleweed marsh available in Goleta Slough. The number of territories observed in Basin L/M was three in 2001 and thirteen in 2003. This year-to-year variation is attributed to the varying amount of impounded freshwater in the basin resulting from rainfall. In years where rainfall amounts are greater, more freshwater is impounded, resulting in fewer available territories in the basin. Based on these results, the proposed experimental basin in Basin L/M could displace several nesting territories and several more unpaired birds. Seven of the thirteen territories observed in 2003 occurred in the area of direct impact, of which six were comprised of nesting pairs.

In both 2001 and 2003, only four territories were observed in Basin E/F, all of which were located outside of the proposed experimental basin boundaries. The portion of the basin in which the experiment would be constructed is lower in elevation and thus is frequently inundated or wet when the sparrows begin forming breeding territories in the spring. Based on this information, it is unlikely that any Belding's savannah sparrow territories would be displaced by proposed tidal inundation in Basin E/F.

Cumulatively, the Aviation Facilities Plan EIS/EIR (2002) identified that the proposed Airfield Safety Projects would affect about 1.3 acres of low-density breeding and foraging habitat for Belding's in the area surrounding Tecolotito Creek. ~~The required mitigation for the Airfield Safety Projects would create approximately 5.5 acres of pickleweed marsh suitable as nesting habitat for Belding's savannah sparrow in Area R-2. This habitat restoration effort is scheduled to begin in 2005.~~

The Aviation Facilities Plan Final EIR/EIS did not identify a specific mitigation ratio or requirement to mitigate impacts to Belding's Savannah Sparrow as a result of the Airfield Safety Projects, but rather assumed that the impact would be fully mitigated to less than significant levels as a result of mitigation requirements for seasonal wetlands impacts.

Required mitigation for the Airfield Safety Projects includes 4:1 replacement for impacts to 13.99 acres of seasonal wetlands. All but 1.3 acres of these impacted seasonal wetlands are not suitable as Belding's Savannah Sparrow habitat. A portion of the 32.6-acre seasonal wetlands mitigation plan includes restoration of 5.5 acres of pickleweed March in Goleta Slough Area R-2. This habitat restoration effort is scheduled to begin in 2005.

The 1.3-acre Belding's Savannah Sparrow habitat impact from the Airfield Safety Projects combined with the 2.25-acre impact from the tidal circulation experiment would result in a total cumulative impact of 3.55 acres. With implementation of 5.5 acres of pickleweed marsh restoration in Area R-2 to meet the seasonal wetland requirement, the total amount of pickleweed habitat suitable for nesting will increase by approximately 1.7 acres from existing conditions. Further, the restored Area R-2 would provide higher quality habitat than currently exists in the areas to be disturbed.

While mitigation for the Airfield Safety Projects would be initiated after the construction of the Tidal Circulation experiment in late 2004, any long-term impacts to the Belding's savannah sparrow habitat would be fully offset, given that more Belding's savannah sparrow habitat would be created than would be impacted by both projects cumulatively.

Given the varying amounts of impounded freshwater in the basins from year to year, the resident population of Belding's savannah sparrow in Goleta Slough appears to be highly mobile and adaptable to changes in the amount of available nesting habitat. Thus, the species is anticipated to likely respond to the introduction of tidal inundation in the experimental basins by finding suitable nesting habitat at higher elevations within the experimental basins or within other basins in the Slough, just as it would in years with high rainfall. In addition, the margins of the newly created pickleweed marsh in the experimental basins would provide high quality habitat for the species because freshwater would not become impounded, resulting in less variation in water levels and more predictable conditions for the sparrow. Under these conditions, plant productivity is also expected to be greater than under the existing non-tidal conditions. The resident population of Belding's savannah sparrows appears to be very productive; hence, the short-term loss of 2.5 acres of nesting habitat would not adversely affect the stability and long-term reproductive success of the population. However, the displacement of potential nesting territories is nevertheless considered a **potentially significant, avoidable impact**.

This impact could be reduced to a **less than significant** level with the incorporation of mitigation measures BIO-1 and BIO-2. BIO-1 would require monitoring prior to, during, and after construction. Work shall be terminated if it is found that nesting pairs are being disturbed. Monitoring shall include noise measurements to be taken during construction activities and while bird activity is concurrently monitored by a qualified biologist to determine whether noise levels at the construction site are disruptive to Belding savannah sparrow.

BIO-2 would prohibit construction of the experimental basins between November 1 and July 15 to avoid the rainy season and disruption of any active nesting territories during the breeding season of the Belding's savannah sparrow.

Brown Pelican

The brown pelican is a state and federally designated endangered species. This resident species is often observed foraging and loafing along Lower Tecolotito Creek near Goleta Beach (i.e., the lagoon portion of the lower creek). It does not occur in the center of Goleta Slough where the study basins are located. Therefore, **no impacts** to the Brown Pelican would result from the project.

Light-footed Clapper Rail

The light-footed clapper rail is a federal endangered species which currently occurs in coastal salt marshes from Carpinteria to San Diego. It occurs in pickleweed or cordgrass dominated salt marsh habitats adjacent to tidal channels. This species historically occurred in Goleta Slough, but has not been observed in the Slough since 1972. Thus, **no impacts** to the Light-Footed Clapper Rail would result from the project.

Plant Species

Several sensitive plant species are known to occur in Goleta Slough and its environs, including southern tarplant (*Hemizonia parryi* ssp. *australis*) and Coulter's goldfield (*Lasthenia glabrata* ssp. *coulteri*). Suitable habitat for these species is not present in Basins E/F and L/M, and there have not been any nearby sightings of these species, as described in the 2002 Environmental Impact Report/Statement for the Aviation Facilities Plan. Therefore, there will be **no impacts** to sensitive plant species as a result of this project.

3.b. Locally designated historic, Landmark or specimen trees

There are no locally designated historic, landmark, or specimen trees in the project area. Therefore, there would be **no impacts** to these resources.

3.c. Natural communities, 3.e. Wildlife Dispersion of Migration Corridors

The proposed project would result in the conversion of the following habitats for the duration of the experiment, and possibly indefinitely, if the experiment is successful and the Airport decides to permanently convert the new experimental basins: 1) non-tidal pickleweed marsh on the basin bottoms would be converted to a mosaic of tidal mudflat and tidal pickleweed marsh; 2) non-tidal mudflats/saltflats on the basin bottoms would be converted to a mosaic of tidal mudflat and tidal pickleweed marsh; 3) non-tidal pickleweed marsh on the basin bottoms would be disturbed to construct a temporary access road, but restored to similar pickleweed/alkali heath marsh habitat; 4) non-native weeds along the proposed access roads would be removed and replaced with native wetland herbs and shrubs. These changes would be consistent with the recommendations of the Draft Goleta Slough Ecological Management Plan to enhance and restore the diversity of habitats and resources within Goleta Slough and, specifically to restore tidal circulation and enhance tidal mud flats and high marsh habitats that are presently underrepresented in the Slough. Thus, these changes would result in a **beneficial impact** to natural communities in the Goleta Slough.

In addition, the proposed project is designed as a field experiment that can be terminated and reverted to pre-project conditions, within two years. If the results of the field experiment are not favorable, the project would be returned to its pre-project topography, hydrologic conditions, and vegetation and the project would not result in a long-term loss or conversion of habitat. Instead, the project would have caused a short-term (4 years) disruption of habitat conditions in portions of the study basins. This change in habitat would be **less than significant** because the interim habitat conditions would provide higher-value habitat during the term of the experiment and the experiment sites would be returned to pre-project conditions.

The Goleta Slough used by small mammals, fish, and some migratory birds. However, the proposed project, which consists of grading and restoring tidal connection within two basins that are presently isolated from tidal influence, would not result in impediments or impacts to wildlife dispersal or migration corridors.

Temporary Construction Impacts

The project construction would result in temporary disturbance of pickleweed marsh, quail bush scrub, coyote bush scrub in a temporary disturbance zone on the perimeter of the basins, at culvert locations, and at the ramp into Basin E/F. These disturbances are considered **potentially significant, avoidable** and can be reduced to a **less than significant** level with the implementation of BIO-3, which requires the Airport to restore the areas of temporary disturbance with seed of local genetic stock and local pickleweed cuttings.

Areas containing non-native weeds on the south berm at Basin E/F and north berm at Basin L/M would be temporarily disturbed due to the establishment of access roads and construction entrances. This disturbance would be a **less than significant impact**. Implementation of mitigation measure BIO-4 would further reduce this impact, by requiring that these areas be seeded with low-lying native perennial plants from Goleta Slough to reduce erosion and prevent further colonization by weeds.

A temporary disturbance would also occur to native plants established on the west berm of Basin E/F as part of the Safety Area Grading mitigation project. This is considered a **potentially significant, avoidable impact** and can be reduced to a **less than significant level** with the implementation of required mitigation measure BIO-5, which requires that these areas be seeded with the same native plants that occur in that area at present.

For each of these disturbances, the interim habitat conditions while new vegetation is being developed provides value to invertebrates and birds because such early successional habitats are scarce in the Goleta Slough.

3.d. Wetland Habitat

The purpose of the tidal circulation experiment is to convert one type of wetland habitat (non-tidal) to another (tidal), thus there is no net loss or gain of wetlands as defined by either the U.S. Army Corps of Engineers or the California Coastal Commission. The types of habitats that would be affected and converted in each basin are summarized below in Table 1. The habitat conversion from non-tidal to tidal habitat would increase the ecological function and value of these areas as tidal salt marsh areas, and, in general, provide for higher productivity and species diversity than non-tidal habitats with similar vegetation types. These changes would be consistent with the recommendations of the Draft Goleta Slough Ecological Management Plan to enhance and restore the diversity of habitats and resources within Goleta Slough and, specifically to restore tidal circulation and enhance tidal mud flats and high marsh habitats that are presently underrepresented in the Slough. Thus, these changes would result in a **beneficial impact** to natural communities in the Goleta Slough.

The possible reversion of these restored areas back to a non-tidal environment would be **potentially significant, avoidable** if appropriate restoration activities were not undertaken. This impact would be reduced to **less than significant** with the incorporation of BIO-6, which requires that the areas be reseeded and planted and returned to their original state within two years.

**TABLE 1
HABITAT IMPACTS**

Area of Interest	Habitat Conversion	Acreage		
		Basin E/F	Basin L/M	Total
Total experimental basin bottoms (not including berms)	Non-tidal pickleweed marsh and mudflats/saltflats converted to tidal mudflats and pickleweed marsh	1.93	2.66	4.59
New berms in the basin bottom	Temporary disturbance of non-tidal pickleweed marsh altering topography, but maintaining the same vegetation	0.51	0.62	1.13
Temporary construction disturbance zone on perimeter of basin, at culvert location, and at ramp into basin	Temporary disturbance to a mixture of pickleweed marsh, quail bush scrub, coyote bush scrub, and non-native weeds. Restored to native habitat after construction has ended	0.50	0.79	1.29
Temporary access road to basin, located on berms	Temporary disturbance non-native weeds. Restored to native habitat after construction has ended	0.28	0.05	0.33

Required Mitigation Measure(s):

BIO-1: The project site shall be monitored by a qualified biologist for Belding's savannah sparrow. Prior to site preparation and construction activities, the Airport shall have a qualified biologist survey all breeding/nesting habitat within the project site every seven days for eight consecutive weeks. Documentation of findings, including negative findings shall be submitted to the California Department of Fish and Game (CDFG). If no breeding/nesting birds are observed and concurrence has been received from CDFG, site preparation and construction activities may begin. If breeding activities or an active nest is located in a work area, site preparation and construction activities shall not begin in that area until the nest becomes inactive, the young have fledged, the young are no longer being fed by the parents, the young have left the area and the young will no longer be impacted by the project.

Once site preparation and construction activities have commenced, the project site shall be monitored for Belding's savannah sparrow on a weekly basis. Documentation of findings, including negative findings shall be submitted to the California Department of Fish and Game (CDFG). Site preparation or construction activities shall be suspended immediately in a given basin if the monitor determines that previously undetected breeding or nesting activity is occurring in that basin and these activities shall not resume until the monitor determines that the breeding and nesting activities described above have ceased. Noise measurements shall be taken during construction activities while bird activity is being concurrently monitored by a qualified biologist to determine whether certain noise levels at the construction site are disruptive to Belding savannah sparrow activity adjacent to the project site. If a significant disruption in foraging behavior is determined to be occurring, construction activities shall cease or be modified immediately in the affected basin(s) until the biologist develops recommendations and receives concurrence from CDFG on measures to reduce or eliminate the disturbance.

Following construction, the experimental basins shall be monitored for Belding's savannah sparrow activity monthly during the experimental period.

BIO-2: Construction shall be prohibited between November 1 and July 15 to avoid the rainy season, Belding's savannah sparrow breeding season and potential Steelhead migration.

BIO-3: Areas of temporary disturbance to pickleweed marsh, quail bush scrub, coyote bush scrub, and non-native weeds on the perimeter of the basins, at culvert locations, and at the ramp into Basin E/F shall be reseeded with local genetic stock and local pickleweed cuttings. Weeding will be performed on an as needed basis to comply with the performance standards. Weeding will occur at least six times per year, or more frequently, if necessary. Weeding will be performed primarily by hand methods, including hand tools and hand-held weed whips. Herbicides will only be used in situations where manual methods are not effective. The restoration performance criteria are as follows: (1) Native plant cover must be at least 33 percent at the end of 2 years, and demonstrate evidence of ongoing and future expansion; and (2) Non-native invasive weeds must remain below 15 percent of the total vegetative cover at all times during the experiment. Formal site inspections to monitor progress towards the performance criteria shall be conducted six times a year during the field experiment. Native plant and weed cover shall be calculated during each visit to determine if the performance criteria are being met, or likely to be met, at the end of Year 2. The Airport shall prepare annual revegetation status report on the condition of the seeded areas during the field experiment. Annual reports will be completed by December 1st of each year. The annual revegetation monitoring period shall be from January through September. The annual reports shall contain a quantitative analysis of attainment of performance standards.

BIO-4: Areas of temporary disturbance due to the establishment of access roads on the south berm at Basin E/F and North Berm at Basin L/M shall be seeded with low-lying native perennial plants from Goleta Slough to reduce erosion and prevent colonization by weeds. Weeding will be performed on an as needed basis to comply with the performance standards. Weeding will occur at least six times per year, or more frequently, if necessary. Weeding will be performed primarily by hand methods, including hand tools and hand-held weed whips. Herbicides will only be used in situations where manual methods are not effective. The restoration performance criteria are as follows: (1) Native plant cover must be at least 33 percent at the end of 2 years, and demonstrate evidence of ongoing and future expansion; and (2) Non-native invasive weeds must remain below 15 percent of the total vegetative cover at all times during the experiment. Formal site inspections to monitor progress towards the performance criteria shall be conducted six times a year during the field experiment. Native plant and weed cover shall be calculated during each visit to determine if the performance criteria are being met, or likely to be met, at the end of Year 2. The Airport shall prepare annual revegetation status report on the condition of the seeded areas during the field experiment. Annual reports shall be completed by December 1st of each year. The annual revegetation monitoring period shall be from January through September. The annual reports will contain a quantitative analysis of attainment of performance standards.

BIO-5: The west berm of Basin E/F shall be restored with seeds from the native plants located in the vicinity of the proposed disturbance. Weeding will be performed on an as needed basis to comply with the performance standards. Weeding will occur at least six times per year, or more frequently, if necessary. Weeding will be performed primarily by hand methods, including hand tools and hand-held weed whips. Herbicides will only be used in situations where manual methods are not effective. The restoration performance criteria are as follows: (1) Native plant cover must be at least 33 percent at the end of 2 years, and demonstrate evidence of ongoing and future expansion; and (2) Non-native invasive weeds must remain below 15 percent of the total vegetative cover at all times during the experiment. Formal site inspections to monitor progress towards the performance criteria shall be conducted six times a year during the field experiment. Native plant and weed cover shall be calculated during each visit to determine if the performance criteria are being met, or likely to be met, at the end of Year 2. The Airport shall prepare an annual revegetation status report on the condition of the seeded areas during the field experiment. Annual reports shall be completed by December 1st of each year. The annual revegetation monitoring period shall be from January through September. The annual reports will contain a quantitative analysis of attainment of performance standards.

BIO-6: If the basins must be reverted to their pre-project state, the full reversion shall occur within two years following the decision of the Airport Director to revert the project and shall utilize seed of local genetic stock and local pickleweed cuttings. In addition, the slide gates shall be removed and the culverts shall be plugged with concrete to restore the project area to its original condition. The basins shall be backfilled with imported clean fill with a soil texture that matches existing conditions.

Residual Impact:

With the application of mitigation measures BIO 1 through 6 above, **potentially significant, avoidable** impacts to endangered species, natural communities, and wetlands would be reduced to **less than significant** levels.

4. CULTURAL RESOURCES.		NO	YES
Could the project:			Level of Significance
a)	Disturb archaeological resources?		Less than significant
b)	Affect a historic structure or site designated or eligible for designation as a National, State or City landmark?	✓	
c)	Have the potential to cause a physical change which would affect ethnic cultural values or restrict religious uses in the project area?	✓	

Discussion:

4a.-c. The project site is not located in any cultural resource sensitivity zone as identified by the Santa Barbara Airport Phase I Archeological Assessment dated 1993. The area of Goleta Slough containing Basins E/F and L/M has been subjected to repeated disturbance, including initial construction of the airfield and filling of the Slough by the Marine Corps in 1941 and again by the Airport during rerouting of Tecolotito Creek and extension of Runway 7/25 in 1970-1972. A low berm that separated Basins E and F was removed in 1999 as part of a Slough restoration project associated with mitigation for the Airport's Safety Area Grading project.

Further, extremely high runoff events, such as those that occurred in the El Nino years of 1995 and 1998, have deposited several feet of fine sediment in the basins. The area historically was comprised on inundated tidelands and is not thought to have supported any human settlements. Over time, the periodic deposition of sediment has increased the bottom elevation of the basins by several feet.

The proposed project would lower the bottom elevations of Basin E/F to about 4 feet elevation at the culvert feet and Basin L/M to about 2.5 feet to match the bottom elevation of Mesa Road ditch. Since the project is not located in a cultural resource sensitivity zone, the sediments to be removed have been deposited since construction of the basins and the area has been subject to repeated disturbance since construction of the Airport and the basins, impacts to cultural resources would be **less than significant**.

The project site and entry area does not contain either a historic structure or site designated or eligible for designation as a National, State or City landmark nor does the site have ethnic cultural or religious significance. The project work is limited to creek restoration and creation of construction entrances and therefore does not have the potential to affect a historic resource or site or cause a physical change that would affect ethnic cultural values or restrict religious uses in the project area. Thus, there would be **no impacts** on historic, ethnic, or religious resources.

Residual Impact: Less than significant.

5. GEOPHYSICAL. Could the project result in or expose people to:	NO	YES
		Level of Significance
a) Seismicity: fault rupture?	✓	
b) Seismicity: ground shaking or liquefaction?		Less than significant
c) Seismicity: seiche or tsunami?	✓	
d) Landslides or mudslides?	✓	
e) Subsidence of the land?	✓	
f) Expansive soils?	✓	
g) Excessive grading or permanent changes in the topography?		Less than significant

Discussion:

5.a-c The closest faults to the project vicinity are the More Ranch Fault and the North Ellwood Fault. The routes of these faults are along the southern edge of Goleta Slough and the northern part of UCSB's main campus. Both faults are considered to be potentially active. This project is not located in the immediate vicinity of the above referenced faults, therefore no faulting is expected to occur on the project site. The area is not susceptible to seiche. The area is susceptible to tsunamis, however no habitable structures or areas where humans would congregate would be created.

The project area may be prone to ground shaking or liquefaction in the event of a major earthquake. However, the project does not involve construction of any habitable structures. Therefore, the Tidal Restoration Experiment would result in **less than significant** impacts related to seismic activity.

5.d The entire site contains no steep slopes of sufficient height to result in landslides or mudslides, thus there is no potential for landslides or mudslides in the project area. The experiment would take place within shallow basins and banks of Goleta Slough.

5.e,f. The project would not result in land subsidence nor are the soils on the project site considered to be expansive. The project would involve excavation of deposited sediment from existing basins; therefore the project would have **less than significant** impacts with respect to subsidence and exposure to expansive soils.

5.g Project grading would involve 3,979 cubic yards of cut and 353 cubic yards of fill in Basin E/F and 8,641 cubic yards of cut and 885 cubic yards of fill in Basin L/M. The project would remove sediments deposited during major runoff events from manmade basins within Goleta Slough in order to reduce the grade sufficiently to allow tidal circulation within the basins. The overall grade of the area would not change substantially as a result of this project. Impacts from grading would be **less than significant**.

Residual Impact: Less than Significant.

6. HAZARDS.	NO	YES
		Level of Significance
Could the project involve:		
a) A risk of accidental explosion or release of hazardous substances (including, but not limited to: oil, pesticides, chemicals or radiation)?		Less than significant
b) The creation of any health hazard or potential health hazards?	✓	
c) Exposure of people to existing sources of potential health hazards?	✓	
d) Increased fire hazard in areas with flammable brush, grass, or trees?	✓	

Discussion:

a-d. Although areas of previous contamination have been identified on Santa Barbara Airport property, the project site and vicinity is not on the State list of contaminated sites and has no known history of site contamination or known existing site contamination. The project would not involve the use of any hazardous materials other than herbicides approved for use in aquatic environments consistent with all regulatory requirements, including AquaMaster, for initial weed removal and periodic vegetation maintenance. Any herbicides used would be from the approved list of herbicides consistent with the City of Santa Barbara Integrated Pest Management Program and would comply with all posting requirements. Therefore, hazard-related impacts would be **less than significant**.

Residual Impact: Less than Significant.

7. NOISE.	NO	YES
		Level of Significance
Could the project result in:		
a) Increases in existing noise levels?		Less than significant
b) Exposure of people to severe noise levels?		Less than significant

Discussion:

Long Term (Operational):

7a.-b. Noise guidelines are established in the City's General Plan Noise Element and in Chapter 9.16 of the Santa Barbara Municipal Code (Noise Ordinance). The Noise Element establishes the maximum acceptable exterior Day-Night Noise Level (L_{dn}) for residential uses at 60 dB(A) and at 45 dB(A) for interior noise levels. It is important to note that these guidelines are intended for long-term, permanent land uses, and do not apply to temporary construction activities. The Noise Ordinance regulates construction noise and stationary mechanical equipment noise.

The L_{dn} averages the varying sound levels occurring over the 24-hour day and gives a 10 decibel penalty to noises occurring between the hours of 10:00 p.m. and 7:00 a.m. to take into account the greater annoyance of intrusive noise levels during nighttime hours. Since L_{dn} is a 24-hour average noise level, an area could have sporadic loud noise levels above 60 dB(A) which average out over the 24-hour period. CNEL is similar to L_{dn} but includes a separate 5 dB(A) penalty for noise occurring between the hours of 7:00 p.m. and 10:00 p.m. CNEL and L_{dn} values usually agree with one another within 1 dB(A).

The Equivalent Noise Level (L_{eq}) is a single noise level, which, if held constant during the time period, would represent the same total energy as a fluctuating noise. L_{eq} values are commonly expressed for periods of one hour, but longer or shorter time periods may be specified. The project is limited to physical improvements to Las Vegas Creek on the Santa Barbara Airport property and involves no changes in the long-term use, and no long-term noise impacts to the receptors in the project area.

Operation of the proposed experiment would not result in any long-term changes in land use or involve any activities that would generate noise. The amount of human and vehicle activity associated with operation of the experiment would be minimal and long-term noise impacts would be **less than significant**.

Short Term (Construction):

Heavy construction equipment proposed for use on this project generate noise levels in the range of 80 to 85 dBA at a distance of 50 feet, while shorter more impulsive noises from other construction equipment can be higher, to over 100 dBA. Noise levels produced by construction equipment vary substantially depending on the type of equipment used and on their operation and maintenance. Some typical examples of construction noise levels are provided in Table 1 below (summarized from Harris, 1979):

Table 1

Equipment	Noise Level (dBA at 50 feet)
Compactor (roller)	70-87
Front loaders	70-96
Backhoes	70-94
Tractors	74-96
Scrapers, graders	75-96
Pavers	82-92
Trucks	69-96
Concrete mixers	72-90
Concrete pumps	74-85
Cranes (moveable)	74-95
Cranes (derrick)	85-88
Pumps	69-80
Generators	69-82
Compressors	68-87
Pneumatic wrenches	82-88
Jackhammers and drills	68-105

Construction of the project, including earthmoving activities, may result in temporary increases in noise from construction equipment during the approximate 60-day construction period. However, these potential increases are temporary, and the project site is already subject to very high noise levels from nearby aircraft operations. Work hours during construction would be 7 AM – 4 PM, weekdays only. Additional restrictions on the hours

of construction activity are not recommended for this project since there are no sensitive receptors in the vicinity of the project site. Given the short-term and intermittent nature of construction activities and limitation of construction hours, nuisance noise impacts from construction activities are considered adverse but **less than significant**. To further minimize short-term construction noise impacts, requirements for equipment mufflers and maintenance are recommended in the NOI-1 identified below.

Recommended Mitigation Measure:

NOI-1. All construction equipment, including trucks, shall be professionally maintained and fitted with standard manufacturers' muffler and silencing devices.

Residual Impact: Implementation of recommended mitigation measure NOI-1 would further reduce the less than significant impact of short-term construction noise.

8. POPULATION AND HOUSING. Could the project:	NO	YES
		Level of Significance
a) Induce substantial growth in an area either directly or indirectly (e.g. through projects in an undeveloped area or extension of major infrastructure)?	✓	
b) Displace existing housing, especially affordable housing?	✓	

Discussion: The project is limited to grading and restoration activities. The project would not involve extension of major utility infrastructure. No loss of dwellings or creation of new dwelling units would occur, and no increase in population would result from the project. The project would have **no impact**.

Residual Impact: None.

9. PUBLIC SERVICES. Could the project have an effect upon, or result in a need for new or altered services in any of the following areas:	NO	YES
		Level of Significance
a) Fire protection?	✓	
b) Police protection?	✓	
c) Schools?	✓	
d) Maintenance of public facilities, including roads?	✓	
e) Other governmental services?	✓	
f) Electrical power or natural gas?	✓	
g) Water treatment or distribution facilities?	✓	
h) Sewer or septic tanks?	✓	
i) Water distribution/demand?	✓	
j) Solid waste disposal?		Less than significant

Discussion: 9a-i. The project is limited to grading and restoration activities and therefore would have **no impact** on fire and police protection, schools, maintenance of public facilities or other government services. The project would require periodic maintenance to clear clogged culverts, which would be completed by Airport maintenance personnel under a certified 1601 Streambed Alteration Agreement by the Department of Fish and Game.

9j. Disposal of fill material from grading activities would be determined by the contractor at the initiation of construction. The material would either be transported to another construction site to be used as clean fill material or provided to the Tajiguas Landfill to be used as clean cover fill. Impacts to solid waste would be **less than significant**. A standard mitigation measure is recommended below to minimize construction-related solid waste through source reduction, reuse, and recycling.

Recommended Mitigation Measure:

PF-1 Recycling and/or reuse of construction and green waste materials shall be implemented and containers shall be provided on site for that purpose during the construction period.

Residual Impact: Impacts to solid waste disposal would be less than significant. Recommended mitigation measure PF-1 would minimize any short-term construction solid waste generation.

10. RECREATION.	NO	YES
		Level of Significance
Could the project:		
a) Increase the demand for neighborhood or regional parks or other recreational facilities?	✓	
b) Affect existing parks or other public recreational facilities?	✓	

Discussion:

10a.–b. The proposed experiment would not increase demand for parks or recreational facilities. The experimental basins are not located in the vicinity of existing recreational facilities and are located in a restricted portion of the airfield that cannot be used for recreational purposes. **No impacts** to recreation would result from the project.

Residual Impact: None.

11. TRANSPORTATION/CIRCULATION.	NO	YES
		Level of Significance
Could the project result in:		
a) Increased vehicle trips?		Less than significant
b) Hazards to safety from design features (e.g. sharp curves, inadequate sight distance or dangerous intersections)?	✓	
c) Inadequate emergency access or access to nearby uses?	✓	
d) Insufficient parking capacity on-site or off-site?	✓	
e) Hazards or barriers for pedestrians or bicyclists?	✓	

Discussion:

11a.–e.

Long –Term: The experimental basins would be monitored approximately once per week by Airport Staff or consultants during the two-year life of the experiment. The project would not generate substantial long-term increased traffic or parking demand. Parking facilities, facilities for bicycles and pedestrians and emergency access would not be affected by this project. Transportation impacts would be **less than significant**.

Short-Term: Construction work would occur during the period of July 15, 2004 to November 1, 2004 when the soils are dry at the basins, runoff in Tecolotito Creek is generally absent, and bird breeding is absent. Access to Basin E/F would be via the Airport access road that parallels Runway 7-25 from the terminal area. The staging area for Basin E/F would be located near the bunker west of the basin. Access to Basin L/M would be via Mesa Road across the CDFG property. The staging area for Basin L/M would be located on the CDFG property west of the basin, pursuant to a temporary construction easement with the CDFG.

Work hours would be 7 AM – 4 PM, weekdays only. Grading would occur at the basins in sequence rather than at the same time. Typical equipment at the project sites would include an excavator or grade-all, backhoe, loader, and 10-cubic yard haul trucks. The typical daily work crew at a basin would be 3 to 5 workers. The average daily worker traffic to and from the basins (one way) would be about 10 trips per day. The estimated peak number of truck trips during hauling events would be 30 trucks per day. Since this project would result in a limited number of truck trips over a short period of time, impacts to traffic and circulation would be **less than significant**. Mitigation Measures TC-1 through TC-4 are included to further reduce less than significant short-term impacts associated with construction activities.

Recommended Mitigation Measure(s):

- TC-1 Construction-related truck trips shall not be scheduled during peak hours (7:30 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m.) to help reduce truck traffic on adjacent streets and roadways.
- TC-2 The route of construction-related traffic shall be established to minimize trips through surrounding residential neighborhoods, subject to approval by the Transportation Manager.
- TC-3 The haul route(s) for all construction-related trucks, three tons or more, entering or exiting the site, shall be approved by the Transportation Manager.
- TC-4 The location of construction parking and storage shall be provided in locations subject to the approval of the Transportation Manager. During construction, free parking spaces for construction workers shall be provided.

Residual Impact: Project impacts to transportation or circulation would be less than significant. The recommended mitigation measures would further reduce temporary construction-related disruptions to circulation.

12. WATER ENVIRONMENT.		NO	YES
Could the project result in:			Level of Significance
a)	Changes in absorption rates, drainage patterns, or the rate and amount of surface runoff?		Less Than Significant
b)	Exposure of people or property to water related hazards such as flooding?	✓	
c)	Discharge into surface waters?		Potentially Significant, Avoidable
d)	Change in the quantity, quality, direction or rate of flow of ground waters?	✓	
e)	Increased storm water drainage?	✓	

Discussion:

12.a. Absorption, Drainage, and Runoff

The proposed project would result in an increase in tidal circulation to Basins E/F and L/M. The Tidal Circulation experiment would change the drainage of basins E/F and L/M by lowering the elevation of the basins through excavation. This would ensure that tidal waters that enter the basins could drain daily. As the basins would be lowered in elevation, the capacity to accept tidal flows and flooding would be increased. The

increase in tidal circulation would be beneficial to water quality, as the tidal flows would be exposed to more mudflat habitat during the tidal cycle, which is considered a beneficial impact to surface water quality because of exposure to filter feeding invertebrates. The project would not result in greater surface runoff, since no impervious surfaces would be created. Construction of a stabilized construction entrances will have a less than significant impact as these entrances would not alter drainage and would be designed to prevent runoff from leaving the site. Therefore, the Tidal Circulation experiment would have a **less than significant** effect on drainage patterns and the rate and amount of surface runoff.

12.b Exposure of People or Property to Flooding

As the basins would be excavated, the cross sectional capacity of the area would be increased. Therefore, the experiment would have a beneficial impact on flood capacity. In addition, the Goleta Slough is the end point of the Goleta Slough Watershed before it empties into the Pacific Ocean; thus, **no flooding impacts** to people or property would occur.

12.c. Discharge into Surface Waters

The project would result in a substantial long-term beneficial effect on creek water quality, since there would be an increase in tidal circulation in the Goleta Slough. In the short-term, project construction would involve earthwork, and restoration of habitat with landscaping improvements. Construction of the proposed experimental basins would involve substantial earthwork to lower the basins. Hence, there is a potential for disturbed soils to be discharged to Tecolotito Creek or Mesa Road Ditch as the result of direct dumping, accidental spills, and/or post-grading erosion during the winter. Increased sedimentation from construction in the tidal channels of Goleta Slough could adversely affect aquatic invertebrates, insects, and fish. While the project is not expected to cause a significant increase in sediments entering the Slough, the project could result in a **potentially significant, avoidable** impact due to increased sedimentation and/or erosion during or following construction activities. This impact could be reduced to a **less than significant** impact level with the incorporation of required mitigation measures: BIO-2, which requires that earthwork be conducted between July 15 and November 1 when soils are dry and there is no rain or runoff that could convey sediments to the tidal channels; WE-1, which requires the implementation of the Storm Water Pollution Prevention Plan that incorporates Best Management Practices (BMPs); and BIO-3, which requires that the basin bottoms be stabilized with pickleweed plants and erosion control mats after grading and prior to opening the culverts for tidal exchange.

Further, use of construction equipment could result in contamination of the creek water quality or native vegetation in the event of an inadvertent oil spillage or leakage during construction equipment use, refueling, maintenance or washing over the five-month construction process. This is a **potentially significant, avoidable** impact that could be reduced to a **less than significant** level with the incorporation of WE-1, which requires the implementation of a Storm Water Pollution Prevention Plan that incorporates BMPs to prevent the likelihood of such an occurrence. Further, any herbicide use will be consistent with the City of Santa Barbara Integrated Pest Management Program, which would further reduce any impacts.

Installation of the culverts in the berms of Basins E/F and L/M would require use of construction equipment within the banks of Tecolotito Creek and Mesa Road Ditch, which may create a **potentially significant, avoidable** impact to water quality due to disturbance of the creek and banks. This impact would be reduced to a **less than significant** impact with the incorporation of required mitigation measure WE-1, which requires that temporary cofferdams be installed at each site to isolate the berms from the tidal channels and allow the earthwork to proceed without contact with water. Also, mitigation measure WE-1 further reduces this impact by requiring that the outer banks be stabilized once the culverts have been installed with an erosion control mat and pickleweed plants to minimize erosion.

12.d. Change in Quantity, Quality, or Flow of Groundwater:

Since the project would only increase the area for tidal circulation, it would not generate any additional drainage or make any subsurface changes that could lead to changes in ground water quality, quantity, or rate of flow and would therefore have **no impact** on ground water quality.

12.e. Storm Water Drainage:

The proposed project would marginally enhance storm water drainage because the tidal water flowing in Tecolotito Creek would have two new outlets into Basins E/F and L/M, thus increasing its capacity. These outlets would decrease the tidal flows in Tecolotito Creek marginally, which would have a beneficial effect on drainage during certain conditions such as the combination of high tide and storm conditions. In addition, implementation of required Water Quality Management Plan, would further protect water quality.

Required Mitigation Measure(s):

WE-1 The Storm Water Pollution Prevention Plan (SWPPP) utilizing Best Management Practices (BMPs) shall be used for grading and construction activities and approved by the Building Division to maintain all sediment on site and out of the drainage system. The plan shall include, at a minimum:

1. Fill material to be imported to the site shall consist of the following: (a) natural rock gravel and cobble for subgrade preparation and access road surface (at Basin L/M only), which shall not contain any contaminants; (b) coconut fiber mats (mesh type) that are biodegradable and will not introduce any contaminants; and (c) native plant seeds and vegetative matter. In the event that the experiment should be reverted, clean fill of a similar type shall be used to fill the basins.
2. The following BMPs for effective temporary and final soil stabilization and to reduce sediment discharges from the site during and after construction shall be implemented: (a) construction shall occur during dry season when there is no rainfall per Mitigation Measure BIO-2; (b) no soils shall be stockpiled near the basins where runoff could enter the creek; (c) the culvert trenches shall be backfilled with low permeability materials to reduce piping and seepage which could destabilize the slopes of the berms; (d) a cofferdam shall be utilized during culvert installation to ensure that the exposed slopes of the berms will not be eroded; (e) to the extent practicable, the areas of disturbance shall be minimized; (f) no grading shall occur outside designated limits on the final engineering drawings; (g) temporary sediment control materials shall be maintained on-site throughout the duration of construction to allow implementation of temporary sediment controls in the event of an unpredicted rain, and for rapid response to failures or emergencies; (h) silt fences shall be deployed along the limits of grading to contain loose soils and filter stormwater runoff, if necessary; (i) post-construction erosion on the basin slopes shall be managed by the use of erosion control blankets (i.e., coconut fiber mesh), as well as proposed pickleweed cuttings and native plants and seeding in the basins and along the berms, (j) the outer slope of the berms shall be stabilized with erosion control mats and vegetation after installing the culverts; and (k) polyethylene covers shall be used to cover exposed stockpiled materials prior to forecast storm events, and anchored to prevent damage by wind.
3. To reduce sediment tracking from the construction site onto private or public roads, a stabilized construction entrance/exit shall be constructed and maintained at construction site entrances and exits to reduce tracking of sediment as a result of construction traffic. The entrance shall be designed to prevent runoff from leaving the site. Stabilization material shall be 3 to 6-inch aggregate. The entrance shall be flared where it meets the existing road to provide an adequate turning radius.

4. To prevent non-stormwater discharges: (a) construction vehicle cleaning and maintenance shall not be performed on-site or in the Slough; (b) all construction vehicles shall be fueled off-site and outside of the Slough in a temporary fueling area designated by the Airport on a level, graded area that is at least 100 feet from all wetlands; (c) watertight shipping containers shall be used to store hand tools, small parts, and most construction materials that can be carried by hand, such as paint cans, solvents and grease; (d) spill clean-up materials, material safety data sheets, a material inventory, and emergency contact numbers shall be maintained and stored in a container; (e) solid wastes shall be loaded directly into trucks for off-site disposal; when on-site storage is necessary, solid wastes shall be stored in watertight dumpsters in the general storage area of the contractors yard; (f) when contaminated soils are encountered, the Airport shall be notified, the contaminated soils shall be contained, covered if stockpiled, and disposed of properly in accordance with all applicable regulations; and (g) portable toilets shall be located and maintained in the staging areas for the duration of the project.
5. The contractor shall inspect the adequacy of BMPs on the site prior to a forecast storm, after a rain event that causes runoff from the construction site, at 24-hour intervals during extended rain events, weekly during the rainy season, and every two weeks during the non-rainy season. The results of all inspections and assessments will be documented, a copy will be provided to the Airport Engineer within 24 hours of the inspection. Copies of the completed inspection checklists will be maintained with the SWPPP. A tracking or follow-up procedure shall follow any inspection that identifies deficiencies in BMPs.
6. If a discharge occurs or if the project receives a written notice or order from any regulatory agency, the Contractor shall immediately notify the Airport Engineer, and will file a written report to the Airport Engineer within 2 days of the discharge event, notice, or order. Corrective measures shall be implemented immediately following the discharge, notice or order. All discharges shall be documented. Discharges requiring reporting include: non-storm water, except conditionally exempted discharges, discharged to the slough without treatment by an approved BMP described in the SWPPP; storm water discharged to the slough where the BMPs have been overwhelmed or not properly maintained or installed; storm water runoff containing hazardous substances from spills discharged to the Slough; and where water quality sample results indicate elevated levels of non-visible pollutants.
7. The proposed basins shall be drained at or near the same locations of existing outlets.
8. The proposed basins shall be designed to drain freely to Goleta Slough, conveying both diurnal tidal waters and runoff from precipitation. No sediments or pollutants shall be discharged during construction, and post-construction sediment discharge shall be minimized by revegetating graded areas.
9. The proposed culverts and slide gates shall be designed to allow the free passage of tidal waters into and out of the basins without any scouring effects. The SWPPP shall contain various BMPs to reduce construction and post-construction erosion and to stabilize all affected slopes.
10. The Airport shall routinely monitor and repair the proposed culverts and slide gates, areas of revegetation, and areas that have been graded. The Airport shall restore and stabilize any areas that become eroded or damaged from precipitation or runoff.
11. Under the proposed SWPPP, the Airport shall conduct visual monitoring of receiving waters during and after construction to ensure that no discharge of pollutants or sediments occurs which could cause water quality exceedances. If it is determined that water quality standards are exceeded, the Airport shall

conduct monitoring until it is determined that water quality standards are no longer being exceeded. An assessment of the potential sources of the excessive pollutant loadings will be conducted and corrective actions to remedy the water quality impacts shall be implemented.

Residual Impact: With implementation of Mitigation Measures BIO-2 and WE-1, potentially significant impacts to water quality would be reduced to **less than significant** levels.

MANDATORY FINDINGS OF SIGNIFICANCE.		YES	NO
a)	Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?		✓
b)	Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals?		✓
c)	Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?		✓
d)	Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?		✓

INITIAL STUDY CONCLUSION

On the basis of this initial evaluation it has been determined that:

Although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because the mitigation measures described in the initial study have been added to the project. A MITIGATED NEGATIVE DECLARATION will be prepared.

Case Planner/Initial Study Preparer: _____

Environmental Analyst: _____

Date: _____

Exhibits:

1. Site Plan
2. Vicinity Map
3. MMRP
4. Biological Resources Report
5. Project Description

LIST OF SOURCES USED IN PREPARATION OF THIS INITIAL STUDY

The following sources used in the preparation of this Initial Study are located at the Community Development Department, Planning Division, 630 Garden Street, Santa Barbara and are available for review upon request.

Biological Resources Report for the Aviation Facilities Plan (URS Corporation, 2001)

Biological Resources Report for the Tide Restoration Field Experiment (URS Corporation, 2003)

California Environmental Quality Act (CEQA) & CEQA Guidelines

General Plan Circulation Element

General Plan Conservation Element

Draft Goleta Slough Ecological Management Plan (1997)

Goleta Slough Tidal Restoration Study Feasibility Study for Field Experiment (URS Corporation, 2003)

1995 Housing Element

General Plan Land Use Element

General Plan Noise Element w/appendices

General Plan Map

General Plan Seismic Safety/Safety Element

Geology Assessment for the City of Santa Barbara

Institute of Traffic Engineers Parking Generation Manual

Institute of Traffic Engineers Trip Generation Manual

Local Coastal Program (Main & Airport and Goleta Slough)

Master Environmental Assessment

Parking Design Standards

Santa Barbara Airport Aviation Facilities Plan (2002)

Santa Barbara Airport Aviation Facilities Plan Final Environmental Impact Statement/Environmental Impact Report (2002)

Santa Barbara Airport – Project Description – Santa Barbara Airport Tide Restoration Field Experiment (2003)

Santa Barbara Municipal Code & City Charter

Special District Map

Uniform Building Code as adopted by City

Zoning Ordinance & Zoning Map

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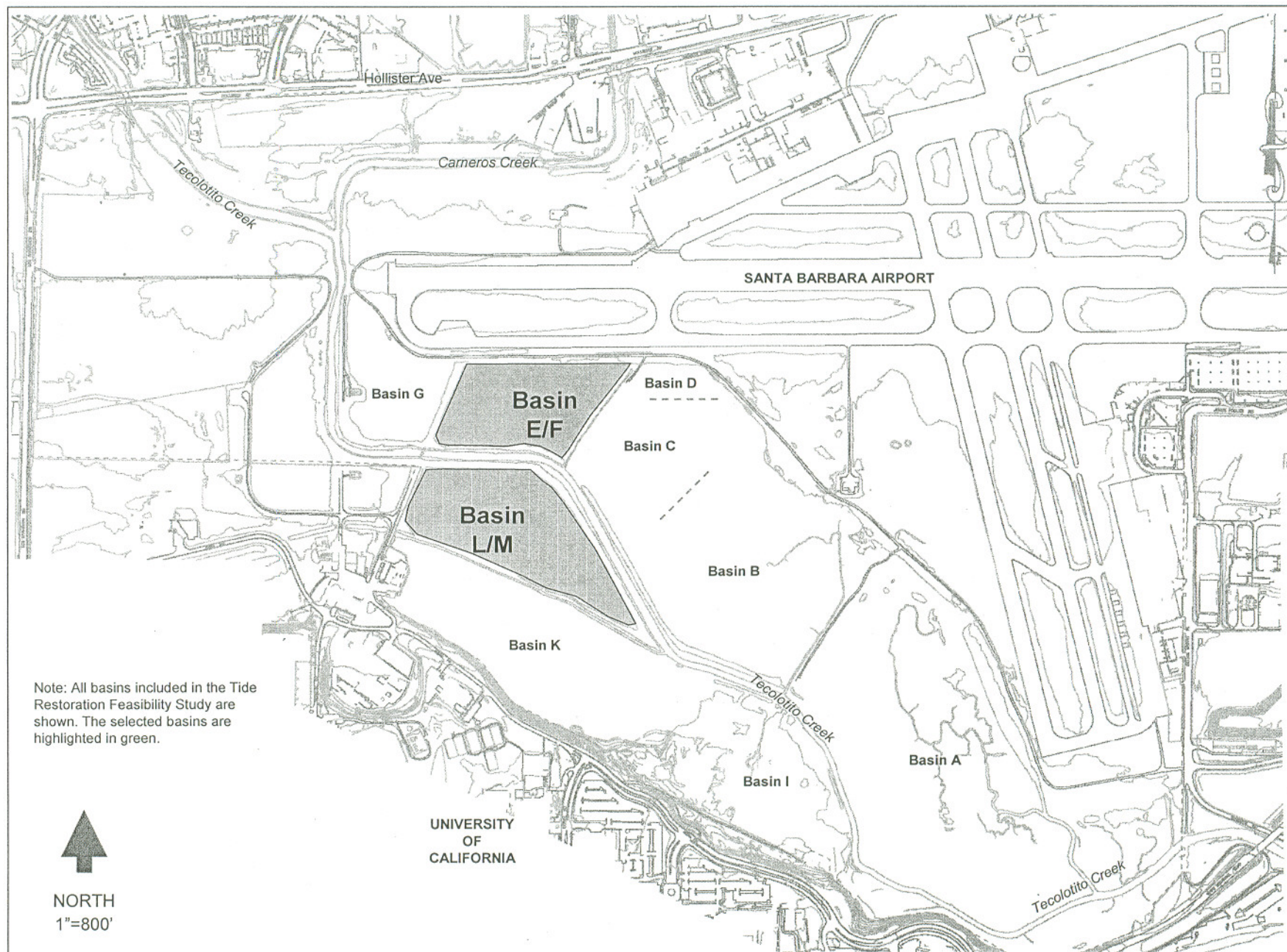
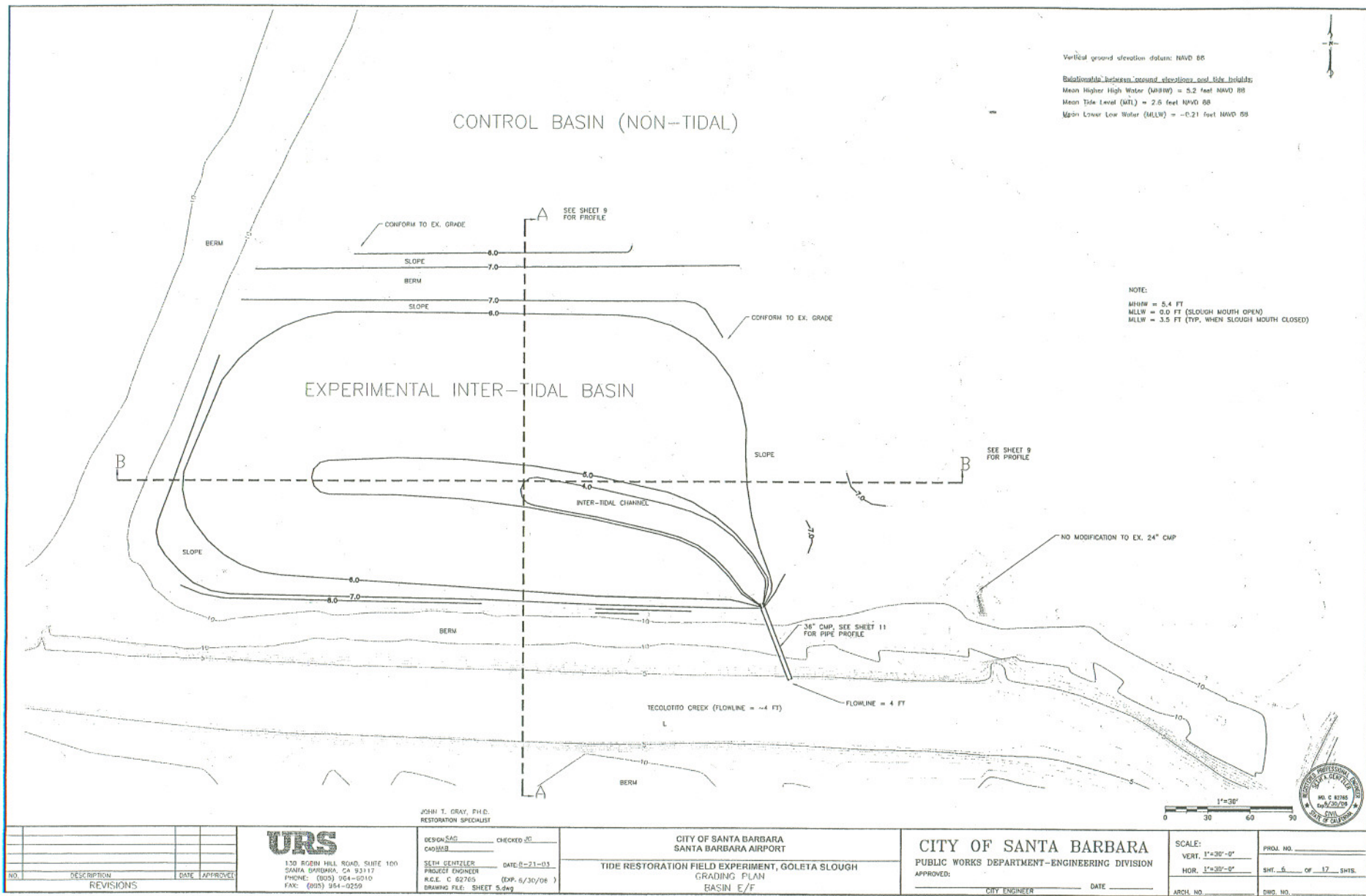
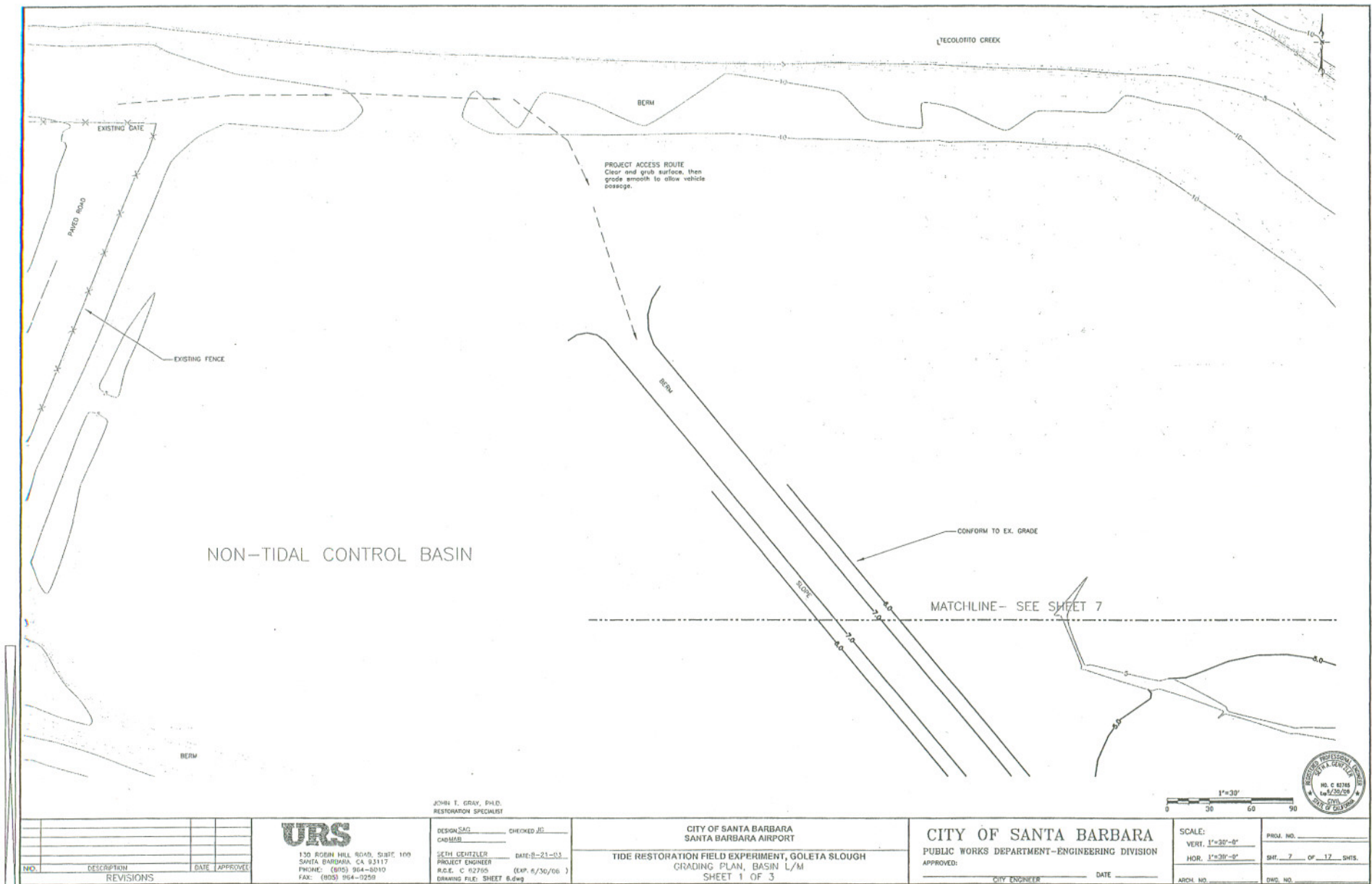


Exhibit 1: Site Plan





48" CUP, SEE SHEET 11
FOR PIPE PROFILE, GULLET AT 1.5 FT

SEE SHEET 10
FOR PROFILE

SEE SHEET 10
FOR PROFILE

MATCHLINE - SEE SHEET 8

INTER-TIDAL
EXPERIMENTAL
BASIN

BASIN
K

Vertical ground elevation datum: NAVD 83

Relationship between ground, shoreline, and tide heights:
Mean Higher High Water (MHHW) = 5.2 feet NAVD 83
Mean Tide Level (MTL) = 2.8 feet NAVD 83
Mean Lower Low Water (MLLW) = -0.21 feet NAVD 83

JOHN T. GRAY, P.E.D.
RESTORATION SPECIALIST

URS

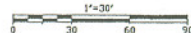
130 BOBIN HILL ROAD, SUITE 100
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PHONE: (805) 964-0010
FAX: (805) 964-0229

DESIGN: SAO CHECKED: KT
CAD: SAO
SEIN: GERHILZER DATE: 11-21-03
PROJECT ENGINEER
R.C.E. C 52765 (EXP. 6/30/06)
DRAWING FILE: SHEET 8.dwg

CITY OF SANTA BARBARA
SANTA BARBARA AIRPORT
TIDE RESTORATION FIELD EXPERIMENT, GOLETA SLOUGH
GRADING PLAN, BASIN L/M
SHEET 3 OF 3

CITY OF SANTA BARBARA
PUBLIC WORKS DEPARTMENT-ENGINEERING DIVISION
APPROVED: _____ DATE: _____
CITY ENGINEER

SCALE:
VERT. 1"=30'-0"
HOR. 1"=30'-0"
PROJ. NO. _____
SHEET 3 OF 17 SHEETS
ARCH. NO. _____
DWG. NO. _____



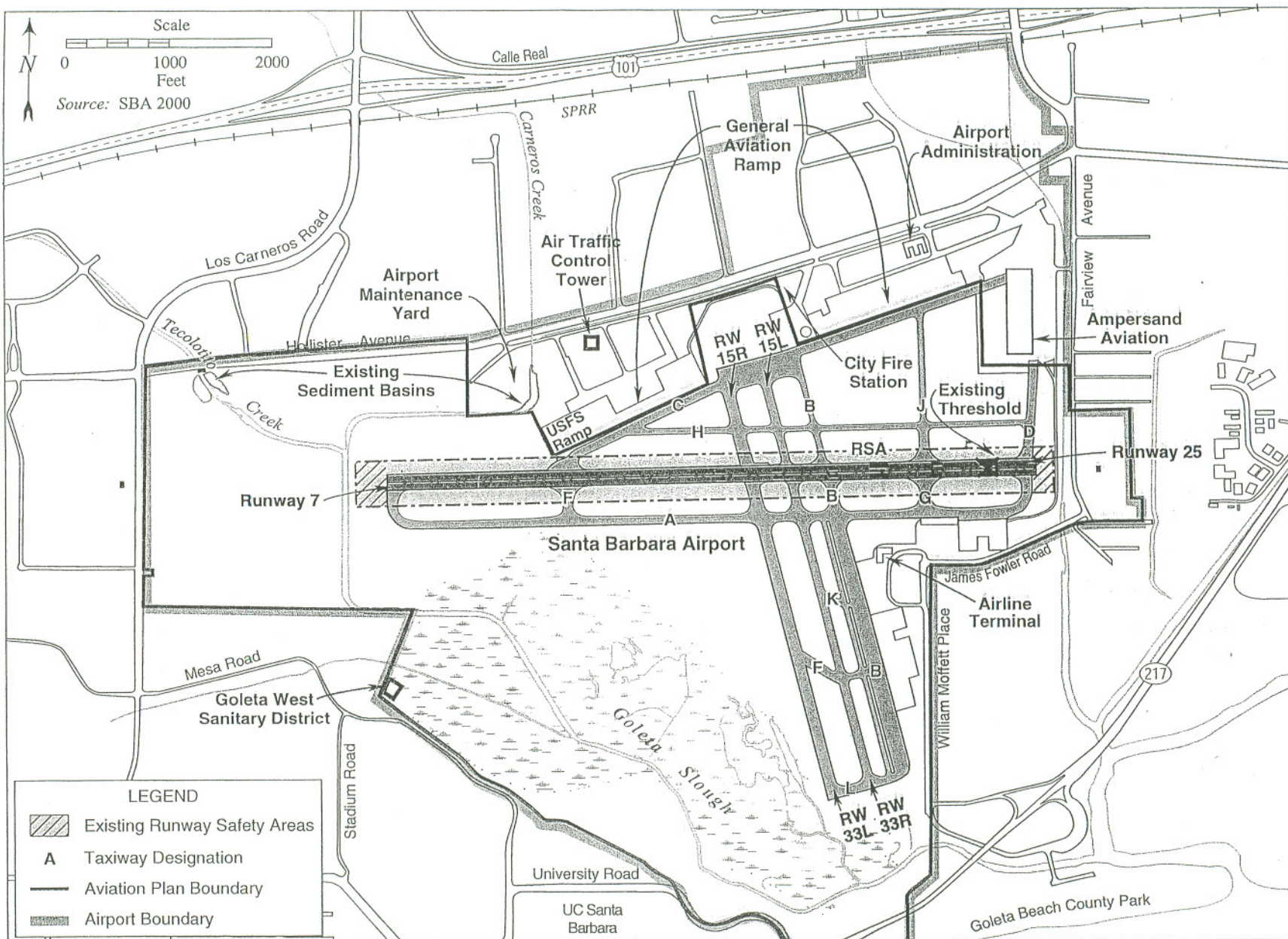


Exhibit 2:

Santa Barbara Airport Tidal Circulation Experiment
MITIGATION MONITORING AND REPORTING PROGRAM

PURPOSE

The purpose of the **Santa Barbara Airport Tidal Circulation Experiment** Mitigation Monitoring and Reporting Program (MMRP) is to ensure compliance with all mitigation measures identified in the Initial Study to mitigate or avoid potentially significant adverse environmental impacts resulting from the proposed project. The implementation of this MMRP shall be accomplished by City staff and the project developer's consultants and representatives. The program shall apply to the following phases of the project:

- Plan and specification preparation
- Pre-construction conference
- Construction of the site improvements
- Post Construction

I. RESPONSIBILITIES AND DUTIES

A qualified representative of the developer, approved by the City Planning Division and paid for by the developer, shall be designated as the Project Environmental Coordinator (PEC). The PEC shall be responsible for assuring full compliance with the provisions of this mitigation monitoring and reporting program to the City. The PEC shall have authority over all other monitors/specialists, the contractor, and all construction personnel for those actions that relate to the items listed in this program.

It is the responsibility of the contractor to comply with all mitigation measures listed in the attached MMRP matrix. Any problems or concerns between monitors and construction personnel shall be addressed by the PEC and the contractor. The contractor shall prepare a construction schedule subject to the review and approval of the PEC. The contractor shall inform the PEC of any major revisions to the construction schedule at least 48 hours in advance. The PEC and contractor shall meet on a weekly basis in order to assess compliance and review future construction activities.

A. PRE-CONSTRUCTION BRIEFING

The PEC shall prepare a pre-construction project briefing report. The report shall include a list of all mitigation measures and a plot plan delineating all sensitive areas to be avoided. This report shall be provided to all construction personnel.

The pre-construction briefing shall be conducted by the PEC. The briefing shall be attended by the PEC, construction manager, necessary consultants, Planning Division Case Planner, Public Works representative and all contractors and subcontractors associated with the project. Multiple pre-construction briefings shall be conducted as the work progresses and a change in contractor occurs.

The MMRP shall be presented to those in attendance. The briefing presentation shall include project background, the purpose of the MMRP, duties and responsibilities of each participant, communication procedures, monitoring criteria, compliance criteria, filling out of reports, and duties and responsibilities of the PEC and project consultants.

It shall be emphasized at this briefing that the PEC and project consultants have the authority to stop construction and redirect construction equipment in order to comply with all mitigation measures.

Once construction commences, field meetings between the PEC and project consultants, and contractors shall be held on an as-needed basis in order to create feasible mitigation measures for unanticipated impacts, assess potential effects, and resolve conflicts.

II. IMPLEMENTATION PROCEDURES

There are three types of activities which require monitoring. The first type pertains to the review of the Conditions of Approval and Construction Plans and Specifications. The second type relates to construction activities and the third to ongoing monitoring activities during operation of the project.

A. MONITORING PROCEDURES

The PEC and required consultant(s) shall monitor all field activities. The authority and responsibilities of the PEC and consultant(s) are described in the previous section.

B. REPORTING PROCEDURES

The following three (3) types of reports shall be prepared:

1. Schedule

The PEC and contractor shall prepare a monthly construction schedule to be submitted to the City prior to or at the pre-construction briefing.

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2. General Progress Reports

The PEC shall be responsible for preparing written progress reports submitted to the City. These reports would be expected on a weekly basis during grading, excavation and construction, activities. The reports would document field activities and compliance with project mitigation measures, such as dust control and sound reduction construction.

3. Final Report

A final report shall be submitted to the Planning Division when all monitoring (other than long term operational) has been completed and shall include the following:

- a. A brief summary of all monitoring activities.
- b. The date(s) the monitoring occurred.
- c. An identification of any violations and the manner in which they were dealt with.
- d. Any technical reports required, such as noise measurements.
- e. A list of all project mitigation monitors.

C. MMRP MATRIX

The following MMRP Matrix describes each initial study mitigation measure, monitoring activities and the responsibilities of the various parties, along with the timing and frequency of monitoring and reporting activities. For complete language of each condition, the matrix should be used in conjunction with the mitigation measures described in full in the Initial Study.

The MMRP Matrix is intended to be used by all parties involved in monitoring the project mitigation measures, as well as project contractors and others working in the field. The Matrix should be used as a compliance checklist to aid in compliance verification and monitoring requirements. A copy of the MMRP matrix shall be kept in the project file as verification that compliance with all mitigation measures has occurred.

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MITIGATION MEASURE	MITIGATION REQUIREMENT	RESPONSIBLE ENTITY	MONITOR	ACTION BY MONITOR	MITIGATION FREQUENCY	MONITORING FREQUENCY	REPORTING FREQUENCY	COMPLIANCE CHECK	VERIFICATION
AQ-1	<p>During site grading and transportation of fill materials, regular water sprinkling shall occur. During clearing, grading, earth moving or excavation, sufficient quantities of water, through use of either water trucks or sprinkler systems, shall be applied to minimize dust generation. Each day, after construction activities cease, the entire area of disturbed soil shall be sufficiently moistened to create a crust but minimized so as to prevent runoff and ponding.</p> <p>Throughout construction, water trucks or sprinkler systems shall also be used to keep all areas of vehicle movement damp enough to prevent dust raised from leaving the site. At a minimum, this will include wetting down such areas in the late morning and after work is completed for the day. Increased watering frequency will be required whenever the wind speed exceeds 15 mph.</p>	Contractor	PEC	Ensure requirement shown on building plans and carried out on site.	At building plan check and daily throughout construction period.	Daily	Weekly	Building & Safety Division and Planning Div.	
AQ-2	Trucks transporting fill shall be covered.	Contractor	PEC	Ensure requirement shown on building plans and carried out on site.	At building plan check and daily throughout construction period.	Daily	Weekly	Building & Safety Division and Planning Div.	
AQ-3	The haul routes for all construction trucks 3 tons or more shall be approved by City Transportation and Parking Manager.	Contractor	PEC	Ensure haul routes identified on building plans and carried out on site.	At building plan check and daily throughout construction period.	Daily	Weekly	Transportation and Parking Manager and Building and Safety Division	
AQ-4	During and after excavation, treat soil to prevent wind pick-up by seeding, use of soil binders, watering or other methods approved by APCD.	Contractor	PEC	Ensure requirement shown on building plans and carried out on site.	At building plan check and daily throughout construction period.	Daily	Weekly	Building & Safety Division and Planning Div.	

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AQ-5	Construction equipment shall be maintained in tune per the manufacturer's specifications.	Contractor	PEC	Ensure construction equipment is maintained in tune per the manufacturer's specifications.	Once prior to construction.	Once prior to construction.	Once prior to construction.	Building & Safety Division.	
AQ-6	Heavy-duty diesel-powered construction equipment manufactured after 1996 (with federally mandated "clean" diesel engines) shall be utilized wherever feasible.	Contractor	PEC	Check that diesel engines used in construction are federally mandated "clean" engines.	Once prior to construction.	Once prior to construction.	Once prior to construction.	Building & Safety Division.	
AQ-7	The engine size of construction equipment shall be the minimum practical size.	Contractor	PEC	Ensure engine sizes are kept to a minimum.	Once prior to construction.	Once prior to construction.	Once prior to construction.	Building & Safety Division	
AQ-8	The number of construction equipment operating simultaneously shall be minimized through efficient management practices to ensure that the smallest practical number is operating at any one time.	Contractor	PEC	Ensure construction equipment is operated through efficient management practices.	Daily during construction.	Weekly during construction.	Weekly during construction.	Building & Safety Division	
AQ-9	Catalytic converters shall be installed on gasoline-powered equipment, if feasible.	Contractor	PEC	Check that diesel engines used in construction are federally mandated "clean" engines.	Once prior to construction.	Once prior to construction.	Once prior to construction.	Building & Safety Division	

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AQ-10	Diesel catalytic converters shall be installed, if available.	Contractor	PEC	Check that diesel engines used in construction are federally mandated "clean" engines.	Once prior to construction.	Once prior to construction.	Once prior to construction.	Building & Safety Division	
AQ-11	Diesel particulate emissions shall be reduced using EPA or California certified and or verified control technologies like particulate traps.	Contractor	PEC	Check that diesel emissions are being reduced by approved technologies.	Once prior to construction.	Once prior to construction.	Once prior to construction.	Building & Safety Division	
AQ-12	Diesel powered equipment shall be replaced by electric equipment whenever feasible.			Check that diesel equipment is replaced whenever feasible.	Once prior to construction.	Once prior to construction.	Once prior to construction.	Building & Safety Division	

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MITIGATION MEASURE	MITIGATION REQUIREMENT	RESPONSIBLE ENTITY	MONITOR	ACTION BY MONITOR	MITIGATION FREQUENCY	MONITORING FREQUENCY	REPORTING FREQUENCY	COMPLIANCE CHECK	VERIFICATION
BIO-1	<p>The project site shall be monitored by a qualified biologist for Belding's savannah sparrow. Prior to site preparation and construction activities, the Airport shall have a qualified biologist survey all breeding/nesting habitat within the project site every seven days for eight consecutive weeks. Documentation of findings, including negative findings shall be submitted to the California Department of Fish and Game (CDFG). If no breeding/nesting birds are observed and concurrence has been received from CDFG, site preparation and construction activities may begin. If breeding activities or an active nest is located in a work area, site preparation and construction activities shall not begin in that area until the nest becomes inactive, the young have fledged, the young are no longer being fed by the parents, the young have left the area and the young will no longer be impacted by the project. Once site preparation and construction activities have commenced, the project site shall be monitored for Belding's savannah sparrow on a weekly basis. Documentation of findings, including negative findings shall be submitted to the California Department of Fish and Game (CDFG). Site preparation or construction activities shall be suspended immediately in a given basin if the monitor determines that breeding or nesting activity is occurring in that basin and these activities shall not resume until the monitor determines that the breeding and nesting activities described above have ceased. Noise measurements shall be taken during construction activities while bird activity is being concurrently monitored by a qualified biologist to determine whether noise levels at the construction site are disruptive to Belding savannah sparrow activity adjacent to the project site. If a significant disruption in foraging behavior is determined to be occurring, construction activities shall cease immediately in the affected basin(s) until the biologist develops recommendations and receives concurrence from CDFG on measures to reduce or eliminate the disturbance. Monitor monthly after construction.</p>	Contractor & Airport Engineer	Qualified Biologist	Monitor prior to, during, and after construction.	Throughout project.	Weekly, beginning 8 weeks prior to construction, weekly during construction, and monthly after construction.	Once prior to construction to gain CDFG concurrence. Once following completion of construction activities, or if disturbance is recorded.	PEC Report to Planning Division and Department of Fish and Game.	

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BIO-2	Construction activities shall be prohibited in the experimental basins between November 1 and July 15 to avoid the rainy season and disruption of any active nesting territories during the breeding season of the Belding's Savannah Sparrow.	Contractor & Airport Engineer	PEC	Check for compliance.	Throughout construction.	Throughout construction.	Once following completion of construction activities.	PEC Report to Planning Division and CA Department of Fish and Game (CDFG).	

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BIO-3	<p>Areas of temporary disturbance to pickleweed marsh, quail bush scrub, coyote bush scrub, and non-native weeds on the perimeter of the basins, at culvert locations, and at the ramp into Basin E/F shall be reseeded with seeds of local genetic stock and local pickleweed cuttings. Weeding will be performed on an as needed basis to comply with the performance standards. Weeding will occur at least six times per year, or more frequently, if necessary. Weeding will be performed primarily by hand methods, including hand tools and hand-held weed whips. Herbicides will only be used in situations where manual methods are not effective. The restoration performance criteria are as follows: (1) Native plant cover must be at least 33 percent at the end of 2 years, and demonstrate evidence of ongoing and future expansion; and (2) Non-native invasive weeds must remain below 15 percent of the total vegetative cover at all times during the experiment. Formal site inspections to monitor progress towards the performance criteria shall be conducted six times a year during the field experiment. Native plant and weed cover shall be calculated during each visit to determine if the performance criteria are being met, or likely to be met, at the end of Year 2. The Airport shall prepare annual revegetation status report on the condition of the seeded areas during the field experiment. Annual reports shall be completed by December 1st of each year. The annual revegetation monitoring period shall be from January through September. The annual reports shall contain a quantitative analysis of attainment of performance standards.</p>	Contractor & Airport Engineer	Qualified Biologist & PEC	Check for compliance.	Once immediately following completion of construction activities and as needed up to six times per year during experiment.	Six times a year during experiment.	Once following completion of construction activities. Once a year during experiment by December 1.	PEC final report to Planning Division and annual monitoring reports to CDFG.	

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MITIGATION MEASURE	MITIGATION REQUIREMENT	RESPONSIBLE ENTITY	MONITOR	ACTION BY MONITOR	MITIGATION FREQUENCY	MONITORING FREQUENCY	REPORTING FREQUENCY	COMPLIANCE CHECK	VERIFICATION
BIO-4	<p>Areas of temporary disturbance due to the establishment of access roads on the south berm at Basin E/F and North Berm at Basin L/M shall be seeded with low-lying native perennial plants from Goleta Slough to reduce erosion and prevent colonization by weeds. Weeding will be performed on an as needed basis to comply with the performance standards. Weeding will occur at least six times per year, or more frequently, if necessary. Weeding will be performed primarily by hand methods, including hand tools and hand-held weed whips. Herbicides will only be used in situations where manual methods are not effective. The restoration performance criteria are as follows: (1) Native plant cover must be at least 33 percent at the end of 2 years, and demonstrate evidence of ongoing and future expansion; and (2) Non-native invasive weeds must remain below 15 percent of the total vegetative cover at all times during the experiment. Formal site inspections to monitor progress towards the performance criteria shall be conducted six times a year during the field experiment. Native plant and weed cover shall be calculated during each visit to determine if the performance criteria are being met, or likely to be met, at the end of Year 2. The Airport shall prepare annual revegetation status report on the condition of the seeded areas during the field experiment. Annual reports shall be completed by December 1st of each year. The annual revegetation monitoring period shall be from January through September. The annual reports shall contain a quantitative analysis of attainment of performance standards.</p>	Airport Engineer and Contractor	PEC and Qualified Biologist	Check for compliance	Once immediately following completion construction activities and as needed up to six per year during experiment.	Six times a year during experiment.	Once following completion of construction activities. Once a year during experiment by December 1.	PEC Report to Planning Division and annual report to CDFG.	

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MITIGATION MEASURE	MITIGATION REQUIREMENT	RESPONSIBLE ENTITY	MONITOR	ACTION BY MONITOR	MITIGATION FREQUENCY	MONITORING FREQUENCY	REPORTING FREQUENCY	COMPLIANCE CHECK	VERIFICATION
BIO-5	The west berm of Basin E/F shall be restored with seeds from the native plants that are presently there. Weeding will be performed on an as needed basis to comply with the performance standards. Weeding will occur at least six times per year, or more frequently, if necessary. Weeding will be performed primarily by hand methods, including hand tools and hand-held weed whips. Herbicides will only be used in situations where manual methods are not effective. The restoration performance criteria are as follows: (1) Native plant cover must be at least 33 percent at the end of 2 years, and demonstrate evidence of ongoing and future expansion; and (2) Non-native invasive weeds must remain below 15 percent of the total vegetative cover at all times during the experiment. Formal site inspections to monitor progress towards the performance criteria shall be conducted six times a year during the field experiment. Native plant and weed cover shall be calculated during each visit to determine if the performance criteria are being met, or likely to be met, at the end of Year 2. The Airport shall prepare an annual revegetation status report on the condition of the seeded areas during the field experiment. Annual reports shall be completed by December 1st of each year. The annual revegetation monitoring period shall be from January through September. The annual reports shall contain a quantitative analysis of attainment of performance standards.	Contractor and Airport Engineer	PEC and Qualified Biologist	Check for compliance	Once immediately following completion construction activities and as needed up to six per year during experiment.	Six times per year during experiment.	Once following completion of construction activities. Once a year during experiment by December 1.	PEC Report to Planning Division and annual report to CDFG.	
BIO-6	If the basins must be reverted to a pre-project state, the full reversion shall occur within two years following the decision of the Airport Director to revert the project and shall incorporate seed of local genetic stock and local pickleweed cuttings. In addition, the slide gates shall be removed and the culverts shall be plugged with concrete to restore the project area to its original state. The basins shall be backfilled with imported clean fill with a soil texture that matches existing conditions.	Airport Engineer	Qualified Biologist	Check for compliance.	Once at conclusion of experiment if reversion is required.	Once at conclusion of experiment if reversion is required.	Once at conclusion of experiment if reversion is required.	Report to Goleta Slough Management Committee and Coastal Commission	

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NOI-1	All construction equipment, including trucks, shall be professionally maintained and fitted with standard manufacturers' muffler and silencing devices.	Contractor	PEC	Check for compliance.	Once prior to construction.	Weekly during construction.	Once following completion of construction activities.	PEC report to Planning Division.	
PF-1	Recycling and/or reuse of construction and green waste materials shall be implemented and containers shall be provided on site for that purpose during the construction period.	Contractor	PEC	Check to ensure containers provided and being used.	Continually during construction.	Continually during construction.	Weekly during construction and final report.	Building & Safety Division	
TC-1	Construction-related truck trips shall not be scheduled during p.m. peak hours (4:00 p.m. to 6:00 p.m.) to help reduce truck traffic on adjacent streets and roadways.	Contractor	PEC	Ensure requirement shown on building plans and carried out on site.	Continually throughout construction period.	Continually throughout construction period.	Weekly during construction and final report.	Planning Division	
TC-2	The route of construction-related traffic shall be established to minimize trips through surrounding residential neighborhoods, subject to approval by the Transportation Manager.	Contractor	PEC	Establish routing plan with Transportation Division and ensure the plan is followed.	Continually throughout construction period.	Continually throughout construction period.	Weekly during construction and final report.	Transportation Division	
TC-3	The haul route(s) for all construction-related trucks, three tons or more, entering or exiting the site, shall be approved by the Transportation Manager.	Contractor	PEC	Establish routing plan with Transportation Division and ensure the plan is followed.	Continually throughout construction period.	Continually throughout construction period.	Weekly during construction and final report.	Transportation Division	
TC-4	The location of construction parking and storage shall be provided in locations subject to the approval of the Transportation Manager. During construction, free parking spaces for construction workers shall be provided.	Contractor	PEC	Determine parking & storage areas with Transportation Division & ensure areas are used.	Continually throughout construction period.	Continually throughout construction period.	Weekly during construction and final report.	Transportation Division	

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WE-1	<p>The Storm Water Pollution Prevention Plan (SWPPP) utilizing Best Management Practices shall be used for grading and construction activities and approved by the Building Division to maintain all sediment on site and out of the drainage system. The plan shall include, at a minimum:</p> <p>1. Fill material to be imported to the site includes the following: (1) natural rock gravel and cobble for subgrade preparation and access road surface (at Basin L/M only), which will not contain any contaminants; coconut fiber mats (mesh type) that is biodegradable and will not introduce any contaminants; and (3) native plant seeds and vegetative matter. In the event that the experiment should be reverted, clean fill of a similar type shall be used to fill the basins.</p>	Contractor	PEC	Check for suitability of fill material.	During construction as fill material is brought to site.	During construction as material is brought to site.	Weekly construction.	PEC report to Planning Division. And RWQCB.	

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MITIGATION MEASURE	MITIGATION REQUIREMENT	RESPONSIBLE ENTITY	MONITOR	ACTION BY MONITOR	MITIGATION FREQUENCY	MONITORING FREQUENCY	REPORTING FREQUENCY	COMPLIANCE CHECK	VERIFICATION
WE-1 (cont.)	2. The following BMPs for effective temporary and final soil stabilization and to reduce sediment discharges from the site during and after construction shall be implemented: (a) construction shall occur during dry season when there is no rainfall per Mitigation Measure BIO-2; (b) no soils shall be stockpiled near the basins where runoff could enter the creek; (c) the culvert trenches shall be backfilled with low permeability materials to reduce piping and seepage which could destabilize the slopes of the berms; (d) a cofferdam shall be utilized during culvert installation to ensure that the exposed slopes of the berms will not be eroded; (e) to the extent practicable, the areas of disturbance shall be minimized; (f) no grading shall occur outside designated limits on the final engineering drawings; (g) temporary sediment control materials shall be maintained on-site throughout the duration of construction to allow implementation of temporary sediment controls in the event of an unpredicted rain, and for rapid response to failures or emergencies; (h) silt fences shall be deployed along the limits of grading to contain loose soils and filter stormwater runoff, if necessary; (i) post-construction erosion on the basin slopes shall be managed by the use of erosion control blankets (i.e., coconut fiber mesh), as well as proposed pickleweed cuttings and native plants and seeding in the basins and along the berms, (j) the outer slope of the berms shall be stabilized with erosion control mats and vegetation after installing the culverts; and (k) polyethylene covers shall be used to cover exposed stockpiled materials prior to forecast storm events, and anchored to prevent damage by wind.	Contractor	PEC	Check for BMP installation and compliance.	Continually throughout construction.	Continually throughout construction.	Weekly during construction, or if there is a violation.	PEC Report to Planning Division and RWQCB.	

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WE-1 (Continued)	3. To reduce sediment tracking from the construction site onto private or public roads, a stabilized construction entrance/exit shall be constructed and maintained at construction site entrances and exits to reduce tracking of sediment as a result of construction traffic. The entrance shall be designed to prevent runoff from leaving the site. Stabilization material shall be 3 to 6-inch aggregate. The entrance shall be flared where it meets the existing road to provide an adequate turning radius.	Contractor	PEC	Check for compliance.	Install once prior construction and maintenance throughout construction period.	Check for installation prior to construction activities then monitor continually throughout construction.	Weekly during construction.	PEC Report to Planning Division and RWQCB.	
	4. To prevent non-stormwater discharges: (a) construction vehicle cleaning and maintenance shall not be performed on-site or in the Slough; (b) all construction vehicles shall be fueled off-site and outside of the Slough in a temporary fueling area designated by the Airport on a level, graded area that is at least 100 feet from all wetlands; (c) watertight shipping containers shall be used to store hand tools, small parts, and most construction materials that can be carried by hand, such as paint cans, solvents and grease; (d) spill clean-up materials, material safety data sheets, a material inventory, and emergency contact numbers shall be maintained and stored in a container; (e) solid wastes shall be loaded directly into trucks for off-site disposal; when on-site storage is necessary, solid wastes shall be stored in watertight dumpsters in the general storage area of the contractors yard; (f) when contaminated soils are encountered, the Airport shall be notified, the contaminated soils shall be contained, covered if stockpiled, and disposed of properly in accordance with all applicable regulations; and (g) portable toilets shall be located and maintained in the staging areas for the duration of the project.	Contractor	PEC	Check for BMP installation and compliance.	Continually throughout construction.	Continually throughout construction.	Weekly during construction, or sooner if there is a violation.	PEC Report to Planning Division and RWQCB.	

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WE-1 (Continued)	5. The contractor shall inspect the adequacy of BMPs on the site prior to a forecast storm, after a rain event that causes runoff from the construction site, at 24-hour intervals during extended rain events, weekly during the rainy season, and every two weeks during the non-rainy season. The results of all inspections and assessments will be documented, a copy will be provided to the Airport Engineer within 24 hours of the inspection. Copies of the completed inspection checklists will be maintained with the SWPPP. A tracking or follow-up procedure shall follow any inspection that identifies deficiencies in BMPs.	Contractor	PEC and Airport Engineer	Perform BMP Inspections.	As needed during and following construction.	Prior to a forecast storm; after a rain event that causes runoff from the construction site; at 24-hour intervals during extended rain events; weekly during the rainy season; every 2 weeks during the non-rainy season.	Completed checklists submitted within 24 hours of inspection to Airport Engineer.	Report to Airport Engineer and RWQCB as required.	
	6. If a discharge occurs or if the project receives a written notice or order from any regulatory agency, the Contractor shall immediately notify the Airport Engineer, and will file a written report to the Airport Engineer within 2 days of the discharge event, notice, or order. Corrective measures shall be implemented immediately following the discharge, notice or order. All discharges shall be documented. Discharges requiring reporting include: non-storm water, except conditionally exempted discharges, discharged to the slough without treatment by an approved BMP described in the SWPPP; storm water discharged to the slough where the BMPs have been overwhelmed or not properly maintained or installed; storm water runoff containing hazardous substances from spills discharged to the Slough; and where water quality sample results indicate elevated levels of non-visible pollutants.	Contractor	PEC	Check for compliance.	Continually throughout construction.	Continually throughout construction.	Continually throughout construction.	Report to Airport Engineer and RWQCB as required.	
	7. The proposed basins shall be drained at or near the same locations of existing outlets.	Airport Engineer	Planning Division	Check for compliance.	Once during plan check.	Ensure that outlets are placed at or near same location as existing outlets.	During plan check.	Planning Division.	

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MITIGATION MEASURE	MITIGATION REQUIREMENT	RESPONSIBLE ENTITY	MONITOR	ACTION BY MONITOR	MITIGATION FREQUENCY	MONITORING FREQUENCY	REPORTING FREQUENCY	COMPLIANCE CHECK	VERIFICATION
WE-1 (Continued)	8. The proposed basins shall be designed to drain freely to Goleta Slough, conveying both diurnal tidal waters and runoff from precipitation. No sediments or pollutants shall be discharged during construction, and post-construction sediment discharge shall be minimized by revegetating graded areas.	Contractor	Planning Division, PEC & Qualified Biologist	Check for Compliance.	Check design during plan check. PEC monitors potential for discharge continually throughout construction and ensures replanting is completed following construction.	During plan check and continually throughout construction.	During plan check and weekly during construction.	PEC report to Planning Division and RWQCB	
	9. The proposed culverts and slide gates shall be designed to allow the free passage of tidal waters into and out of the basins without any scouring effects. The SWPPP shall contain various BMPs to reduce construction and post-construction erosion and to stabilize all affected slopes.	Contractor/ Airport Engineer	PEC/ Airport Engineer.	Check for compliance.	Check design during plan check. PEC and Airport Engineer monitor BMP compliance throughout construction and biweekly following construction.	During and following construction as required in SWPPP.	During and following construction as required in SWPPP.	RWQCB	
	10. The Airport will routinely monitor and repair the proposed culverts and slide gates, areas of revegetation, and areas that have been graded. The Airport will restore and stabilize any areas that become eroded or damaged from precipitation or runoff.	Airport Department	Airport Engineer	Check for compliance.	Bi-Weekly during experiment.	Bi-Weekly during experiment.	Following construction as required in SWPPP.	RWQCB	
	11. Under the proposed SWPPP, the Airport shall conduct visual monitoring of receiving waters during and after construction to ensure that no discharge of pollutants or sediments occurs which could cause water quality exceedances. If it is determined that water quality standards are exceeded, the Airport shall conduct monitoring until it is determined that water quality standards are no longer being exceeded. An assessment of the potential sources of the excessive pollutant loadings will be conducted and corrective actions to remedy the water quality impacts will be implemented.	Contractor	PEC	Conduct visual monitoring of receiving waters during construction.	Daily during construction.	Daily during construction.	Weekly during construction, sooner if there is an exceedances of water one or more water quality standards/	Report to Planning Division.	

BIOLOGICAL RESOURCES REPORT

TIDE RESTORATION FIELD EXPERIMENT

GOLETA SLOUGH

SANTA BARBARA AIRPORT

September 2003



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1.0 INTRODUCTION

The Santa Barbara Airport (Airport) proposes to conduct a short-term field experiment in Goleta Slough to increase tidal circulation for wetland enhancement purposes. The experiment includes the creation of two small tidal basins that would be monitored for 2 or more years. The overall objective of the tidal restoration experiment is to provide empirical data to assist in determining the feasibility of a long-term tidal restoration program at Goleta Slough. The implementation of a small-scale pilot project will provide an opportunity to observe the hydrologic and ecological effects of increasing tidal circulation to a non-tidal area of the slough. The experiment will be monitored to assess the success in establishing the desired tidal habitats, identify potential implementation and maintenance problems, and assess the effects of habitat changes on aviation bird strike hazards. Empirical data from the field experiment will provide a solid scientific foundation for assessing the feasibility of a larger program. The results of the experiment will also be used to refine the approach and site design of a larger restoration project.

Under the proposed field experiment, two small tidal basins will be created by excavating portions of larger non-tidal basins, and installing culverts that connect the basins to tidal channels. Each experimental basin will be located near a “control basin” (i.e., an existing non-tidal basin) to allow a comparison of the environmental changes due to tidal circulation. This experimental design will also allow a comparison of bird use in tidal and non-tidal areas to assess the effects on the bird strike conditions at the Airport. Conditions in the experimental and control basins will be jointly monitored on a continuous basis.

The proposed experimental tidal basins would be constructed by the Airport on City property during the period August through November 2004. The field experiment is planned to be conducted for two years, ending in November 2006, unless it is determined that the experiment should be terminated earlier due to public safety concerns, or if the experiment should be extended beyond this date to collect more information.

A detailed description of the proposed field experiment, including construction of the basins, is presented in a separate document – Project Description, Tide Restoration Experiment, Goleta Slough (URS Corporation, 2003).

2.0 CURRENT SITE CONDITIONS

The experimental basins will be located within portions of two non-tidal basins in Goleta Slough on Airport property – Basin E/F and Basin L/M (Figure 1). Descriptions of the physical features and habitats in these basins are provided below, and shown on Figures 2 through 4. Site photographs are presented in Appendix B.

2.1 PHYSICAL FEATURES

2.1.1 Basin E/F

Basin E/F is a 13-acre basin located adjacent to Taxiway A (Figure 1). The berm on the west side of the basin is a remnant of Adams Road, and contains a sewer line that extends across Tecolotito Creek to Goleta West Sanitary District (Figure 3). The top of the berm contained an asphalt road which was removed and restored to native habitat in 2000. The basin is accessed by a gravel service road between Taxiway A and the north side of the basin.

Basin E/F previously had a low berm in the middle which was removed in 2000 as part of the Safety Area Grading restoration project, allowing free movement between the two low-lying areas of the basin (Figure 3). The bottom elevations of the basin range from 5.5 to 7 feet. The basin is connected to Tecolotito Creek through a 24-inch diameter culvert in the south berm. The invert elevation of the culvert is 4 feet, which would theoretically allow tidal inflow and outflow. However, sediment deposits block the inlet to the culvert. As a result, this basin usually only has freshwater derived from stormwater runoff that discharges to the basin from a storm drain on the north side of the basin. The northwest corner of the basin is lower than the rest of the basin. It collects precipitation and runoff which can persist for months during wet years while the remainder of the basin is dry.

2.1.2 Basin L/M

Basin L/M is located on the south side of Tecolotito Creek and encompasses about 16.9 acres (Figure 1). It is a single unit, but has two major “cells” in the southwest and southeast corners of the basin created by a small ridge in the middle of the basin (Figure 4). These low-lying areas collect precipitation and are typically ponded for many months of the year. The bottom elevations of the basin range from 5.5 to 6 feet.

Adams Road creates the berm on the west side of the basin. Access to this basin is available from two gates on the east side of Adams Road. The north and east berms are located along Tecolotito Creek. The south side of the basin contains a small berm adjacent to Mesa Road Ditch. There is a small opening to the basin on the south side that is about four feet wide. The invert of the channel is about 4 feet, sufficient to allow tidal circulation. However, sediment deposits on the inlet of the channel (up to 7 feet elevation) block all but the extreme high tides. As a result, this basin is usually only filled with freshwater derived from direct precipitation.

2.2 VEGETATION TYPES

The vegetation types and dominant plant species in the study basins are described below basin on a review the Airport-wide vegetation mapping prepared in 1999 by Woodward-Clyde Consultants and updated in January 2000; and field surveys of the basins by URS biologists in January 2003. The vegetation coding and classification follows the prior mapping efforts at the Airport. The dominant vegetation types observed at the study basins are summarized below in Table 1 and shown on Figure 5.

TABLE 1
SUMMARY OF VEGETATION TYPES AND DOMINANT SPECIES

Map Code	Type	Dominant Species	Habitat
1	Pickleweed marsh	Pickleweed (<i>Salicornia virginica</i>), Spreading alkali-weed (<i>Cressa truxillensis</i> var. <i>truxillensis</i>), Alkali heath (<i>Frankenia salina</i>), Saltgrass (<i>Distichlis spicata</i>), Alkali-mallow (<i>Malvella leprosa</i>)	Low-lying non-tidal basin bottoms
11	Bulrush marsh	Alkali bulrush (<i>Scirpus maritimus</i>)	Low-lying non-tidal basin bottoms where freshwater predominates
16	Mudflat or saltflat (non-tidal)		Low-lying non-tidal basin bottoms with high saline soils
21	Ruderal vegetation	Black mustard (<i>Brassica nigra</i>), Horseweed (<i>Conyza canadensis</i>), White sweetclover (<i>Melilotus alba</i>), Cocklebur (<i>Xanthium strumarium</i>), Italian ryegrass (<i>Lolium multiflorum</i>), Bristly ox-tongue (<i>Picris echioides</i>)	Man-made berms around the basins
24	Quail bush scrub	Brewer saltbush (<i>Atriplex lentiformis</i> var. <i>breweri</i>)	Patches on the berms
26	Coyote bush scrub	Coyote brush (<i>Baccharis pilularis</i>)	Patches on the berms
Previously Restored Areas	Seasonal haline wetlands	Spreading alkali-weed (<i>Cressa truxillensis</i> var. <i>truxillensis</i>), Alkali heath (<i>Frankenia salina</i>), Saltgrass (<i>Distichlis spicata</i>), Brewer saltbush (<i>Atriplex lentiformis</i> var. <i>breweri</i>)	On the perimeter of Basin E/F, installed by the Airport in 2000

2.2.1 Basin E/F

A wide variety of vegetation types occur in Basin E/F. The low-lying portions of the basin exhibit three types based on the soil salinity and duration of flooding. Areas that contain water for extended periods of time, such as in the northwest corner of the basin, generally inhibit the development of vegetation due to the effects of standing water. In addition, these areas tend to build up salts over time due to evaporation during the summer and fall. As such, the lowest portions of Basin E/F contain mudflats, saltflats, and scattered pickleweed (Figure 5). Intermediate elevations in the basin contain pickleweed marsh with scattered bulrush and cattail plants, indicating freshwater conditions. The higher elevations in the basin bottom, which encompass most of the basin, are dominated by dense, continuous pickleweed marsh.

The berms along the north and west sides of Basin E/F were graded and planted with native wetland herbs and shrubs in 2000 by the Airport as part of the wetland restoration for the Safety Area Grading Project. The dominant species include pickleweed, alkali heath, and quail bush.

The berm along the south side of the basin, adjacent to Tecolotito Creek, is dominated by the non-native black mustard. A dense, almost impenetrable stand occurs along the top of the berm. The sides contain a mixture of pickleweed, alkali heath, quail bush, coyote bush, and non-native weeds.

2.2.2 Basin L/M

Basin L/M exhibits a less diverse mixture of vegetation types than Basin E/F. There are several low-lying patches with mudflats, saltflats, and scattered pickleweed (Figure 5). However, the basin bottom is dominated by dense, continuous pickleweed marsh. The berms along all sides of Basin L/M are dominated by the non-native black mustard. Dense impenetrable stands occur along the tops of the berms. The sides contain a mixture of pickleweed, alkali heath, quail bush, coyote bush, and non-native weeds.

2.2.3 Tecolotito Creek

The creek bottom is unvegetated, consisting of loose silts and sands. Water levels in the creek vary due to fluctuations in the tide and runoff conditions. During low tides, mudflats are exposed. The lower banks of the creek contain pickleweed and alkali heath plants.

3.0 SENSITIVE SPECIES

A description of sensitive species that could occur at and near Basins E/F and L/M, and along Tecolotito Creek, is provided below based on biological investigations of Goleta Slough associated with the Environmental Impact Report/Statement for the Airport Facility Plan, completed in 2002, as well as specific field investigations of the basins by URS for this report. Sensitive species include species designated as threatened or endangered by the state or federal government, or Species of Special Concern, as designated by the California Department of Fish and Game.

Southern Steelhead

The southern steelhead trout is designated an endangered species along the South Coast by the National Marine Fisheries Service (NMFS). There are recent incidental observations of steelhead in many South Coast streams such as Carpinteria, Montecito, and Mission creeks. There is documented evidence on Mission Creek of spawning. There have been anecdotal sightings of steelhead on upper San Jose Creek, and confirmed sightings on Atascadero and Marie Ygnacio creeks in the past several years. The latter sightings indicate that steelhead can move from the ocean into lower Goleta Slough. However, there have been no sightings or historic records of steelhead along Carneros, San Pedro, and Tecolotito creeks.

It is possible for transitory, individual adult steelhead to attempt to migrate upstream in Tecolotito Creek. However, this occurrence would be considered very unlikely. There are numerous passage impediments upstream of Hollister Avenue. Suitable spawning habitat may be present in Glen Annie Creek; however, summer rearing habitat appears to be limited or absent. Based on this information, steelhead are not expected to occur along Tecolotito Creek in or above Goleta Slough, as concluded in the Biological Assessment for the Airport Facilities Plan (URS Corporation, 2001) prepared for, and accepted by, NMFS.

Tidewater Goby

The tidewater goby is designated an endangered species by the US Fish and Wildlife Service. It occurs in coastal brackish lagoons along the central and southern California coast. Local resident populations are present at the mouths of Gaviota, Arroyo Burro, and Mission creeks, among others. Although the tidewater goby was reported to be present in Goleta Slough in the 1970s, there was no confirmed evidence. Field investigations in the 1980s and 1990s failed to detect its presence. Hence, this species is presumed to be absent from Goleta Slough, as concluded in the Biological Assessment for the Airport Facilities Plan (SAIC, 2001) prepared for, and accepted by, USFWS.

Belding Savannah Sparrow

Belding's Savannah Sparrow (*Passerculus sandwichensis beldingi*) is a subspecies of the widespread savannah sparrow that breeds in coastal salt marshes of northwestern Mexico and of southern California as far north as Goleta. This subspecies was listed as endangered by the California Department of Fish and Game in 1974. It favors *Salicornia* marsh, such as occurs at Goleta Slough, and nests in the upper littoral of these marshes, where their nests are safe from the highest tides that occur during the nesting season. In Goleta Slough where basins are non-tidal, birds establish

territories above the water line created by freshwater impoundments from precipitation. The species utilizes pickleweed for nesting, perching, and singing. The number of territories varies each year, and has ranged from 72 in 1992, to 140 territories in 1994 (Holmgren and Kisner, 1994).

Surveys of Belding's savannah sparrow were conducted in May 2001 at Basins A, B/D, E/F, G, and L–M to characterize the total population in the slough (URS Corporation, 2002). Approximately 68 territories were detected in the following non-tidal basins:

- Basin A - 39
- Basin B/D - 20
- Basin E/F - 4
- Basin L/M - 3
- Basin G - 2

New surveys were conducted of the study basins in May 2003 to confirm the above results. Surveys were conducted by David Compton for URS Corporation. During the surveys, the western portion of Basin E/F was flooded and shallow water covered much of the eastern and central portions. In Basin L/M, portions of the eastern and western basin were flooded, while the middle was mostly dry. Three singing males were detected in Basin E/F. Two additional birds perched together were assumed to be a pair. Thus, approximately four territories were detected, none of which were in the western portion of the basin (see Figure 8).

In Basin L/M, 13 territories were confirmed in May 2003, much higher than observed in May 2001. Of these territories, 7 had singing males, four were identified by perched pairs, and two were identified by a perched male. Six of the territories occurred in the area of the experimental basin (see Figure 8).

Brown Pelican and Light-footed Clapper Rail

The brown pelican is a state and federally designated endangered species. This resident species is often observed foraging and loafing along Lower Tecolotito Creek near Goleta Beach (i.e., the lagoon portion of the lower creek). It does not occur in the center of Goleta Slough where the study basins are located.

The light-footed clapper rail is a federal endangered species which currently occurs in coastal salt marshes from Carpinteria to San Diego. It occurs in pickleweed or cordgrass dominated saltmarsh habitats adjacent to tidal channels. This species historically occurred in Goleta Slough, but has not been observed in the slough since 1972.

Plant Species

Several sensitive plant species are known to occur in Goleta Slough and its environs, including southern tarplant (*Hemizonia parryi ssp. australis*) and Coulter's goldfield (*Lasthenia glabrata ssp. coulteri*). Suitable habitat for these species is not present in Basins E/F and L/M, nor are there any nearby sightings of these species, as described in the Final Environmental Impact Report/Statement for the Airport Facility Plan .

4.0 OCCURRENCE OF WETLANDS

4.1 CORPS OF ENGINEERS JURISDICTION

Under Section 404 of the Clean Water Act, the Corps of Engineers (Corps) regulates the discharge of fill and dredged material into “waters of the United States,” which are broadly defined in 33 CFR 328.3(a) to include navigable waters and others, such as intermittent streams and wetlands adjacent to such streams. The lateral limits of Corps 404 jurisdiction in non-tidal “waters” are defined as *the ordinary high water mark*, unless adjacent wetlands are present. If wetlands occur within, or adjacent to, “waters,” the lateral limits of jurisdiction will extend beyond the ordinary high water mark to the outer edge of the wetlands. The term “ordinary high water mark” means the line on the shore or edge of a channel established by the fluctuation of water and indicated by physical characteristics such as a clear natural line impressed on the bank, shelving, destruction of vegetation, debris, etc.

Under Section 10 of the Rivers and Harbors Act, the Corps also has jurisdiction over work in navigable waters, which are defined as the limit of tidal influence (i.e., high tide line).

The Corps defines wetlands as: *“Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions”* (33 CFR 328.3). Under the Clean Water Act, wetlands must exhibit the following three characteristics: (1) hydrophytic vegetation - a predominance of plants that are adapted to anaerobic soil conditions; (2) hydric soils - soils classified as hydric or that exhibit characteristics of reducing soil environment; and (3) wetland hydrology - inundation or soil saturation during a certain portion of the growing season.

The Corps’ jurisdiction at the study basins is summarized below:

Section 10 of the Rivers and Harbors Act:

- Bottoms and lower banks of Tecolotito Creek and Mesa Road Ditch (below 6 feet elevation)

Section 404 of the Clean Water Act:

- Bottoms of Basins E/F and L/M which include jurisdictional wetlands (i.e., pickleweed marsh) and unvegetated “waters of the United States” (i.e., mudflats and saltflats). The lateral limit of jurisdiction is the limit of vegetated wetlands on the lower slopes of the berms surrounding the basin. The pickleweed marsh exhibits the three requisite characteristics of wetlands, and was identified as Corps jurisdictional wetlands in the 1999 delineation of wetlands on the Airport property.

4.2 CALIFORNIA DEPARTMENT OF FISH AND GAME JURISDICTION

Fish and Game Code 1600 requires that the California Department of Fish and Game (CDFG) be notified of any activity that could affect the bank and bed of any stream or lake that has value to fish and wildlife. Upon notification, the CDFG has the opportunity to execute a Streambed Alteration Agreement. CDFG does not have a formal definition of watercourses under their jurisdiction. Their practice has been to include any natural drainage with a definable bank and bed. Man-made drainages are typically included if the drainages have taken on the character of a natural stream; the drainage supports habitat; and/or the drainage will function as a natural watercourse in the future without human intervention, and is not supported solely by irrigation runoff. Wetlands need not be present for CDFG jurisdiction. The lateral extent of CDFG jurisdiction is typically the outer limit of any riparian vegetation contiguous with the bank of the watercourse.

At the study basins, CDFG jurisdiction under Fish and Game Code 1600 would extend along Tecolotito Creek and Mesa Road Ditch, extending from top of berms. The basins themselves would not be considered a stream or lake, and as such, would not be included in their jurisdiction.

4.3 OCCURRENCE OF COASTAL ACT WETLANDS

The study basins occur in the Coastal Zone, and within the original permitting authority of the California Coastal Commission. As such, the proposed project The project will require a Coastal Development Permit (CDP) from the CCC. Wetlands are defined in Section 30121 of the Coastal Act as follows: “*Wetlands means lands within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, or fens.*”

The operative criterion in the above definition is the presence of shallow water on land. The definition does not reference hydric soils or vegetation types, nor does it state or imply the required duration of inundation. Based on the above language, it appears that the wetland definition from the CCC regulations requires two parameters for vegetated wetlands (i.e., hydrology and wetland plants). However, the CCC typically identifies wetlands based on the presence of a single characteristic – typically, the presence of hydrophytic plants.

The basin bottoms contain hydric soils, wetland hydrology, and wetland vegetation (where pickleweed marsh occurs). Hence, the basin bottoms are considered wetlands based on the above guidance. The unvegetated bottom of Tecolotito Creek and Mesa Road Ditch are considered Coastal Act wetlands, consisting of intertidal mud flats and open water. The banks on the sides of the basin may not be considered Coastal Act wetlands because they are not regularly inundated, and they drain freely. However, the banks are dominated by hydrophytic plants (i.e., pickleweed and alkali heath), and are likely to be considered wetlands by CCC staff due to this condition alone.

4.4 OCCURRENCE OF ENVIRONMENTALLY SENSITIVE HABITAT AREAS

Section 30107.5 of the Coastal Act defines “Environmentally sensitive area” as “... *any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments.*” In the Coastal Act, “environmentally sensitive area” is synonymous with “environmentally sensitive habitat area” (ESHA) and “environmentally sensitive habitat.” The City’s Local Coastal Plan and the LCP Element for the Airport and Goleta Slough do not define and “environmentally sensitive habitat,” “environmentally sensitive area,” or “environmentally sensitive habitat area.”

The Coastal Act does not specifically state that wetlands are “environmentally sensitive areas” or “environmentally sensitive habitat areas.” Instead, a statement in the 1981 Interpretive Guidelines for Wetlands and Other Wet Environmentally Sensitive Areas provides guidance: “*The Commission generally considers wetlands, estuaries, streams, riparian habitats ... to be environmentally sensitive habitat areas because of the especially valuable role of these habitats in maintaining the natural ecological functioning of many coastal habitat areas...*” Based on this statement, it is generally the practice of the CCC to consider all wetlands, regardless of size and condition, as ESHAs.

Based on these considerations, the study basins, Tecolotito Creek, and Mesa Road Ditch may be considered ESHAs under the Coastal Act for several reasons. One, wetlands under the Coastal Act are present at all locations. Two, the basins support an endangered species – the Belding savannah sparrow. Three, the creek and ditch represent “streams” that support “riparian habitat,” as defined in the Coastal Act and the 1981 Interpretive Guidelines for Wetlands and Other Wet Environmentally Sensitive Areas.

5.0 POTENTIAL IMPACTS

5.1 THRESHOLDS OF SIGNIFICANCE

A significant impact is defined under Section 15382 of the CEQA Guidelines as "a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, ..." The determination of a significant impact involves professional judgment by experts based on scientific and factual data. A single precise definition of significant impact is not possible because the significance of an effect will vary with the environmental setting and the sensitivity of the resource. The primary factors that should be considered when assessing significance are the direct and indirect physical changes to the environment by the project (CEQA Guidelines 15064).

The recommended Environmental Checklist for Initial Studies included in Appendix G of the CEQA Guidelines includes several specific biological impacts that can be used to assess the potential for a significant impact, as listed below:

- a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?
- b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?
- c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?
- d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?
- e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?
- f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

In addition, CEQA Guidelines Section 15065 identifies several impacts that must be considered significant. Biological impacts that must be considered significant are as follows: "... substantially reduce the habitat of a fish and wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, or reduce the number or restrict the range of an endangered, rare or threatened species."

The City of Santa Barbara has not adopted specific thresholds of significance for use in CEQA environmental documents. As such, the above guidance and specific thresholds on biological impacts are used in the following assessment of the biological impacts of the proposed project.

5.2 SUMMARY OF THE PROPOSED PROJECT

A detailed description of the project is provided in a separate report, which include preliminary design drawings (URS Corporation, 2003). A summary of the project elements is provided below, and shown on Figures 3, 5, and 7.

5.2.1 Construction of Experimental Basins

A 2.02-acre experimental basin will be constructed in the southwest corner of Basin E/F (Figure 4). The basin will be excavated to about 4 feet elevation, which will match the bottom elevation of Tecolotito Creek, thereby allowing the fullest range of tide elevations possible. A 20-foot wide channel will be created in the center of the basin. Most of the bottom of the basin will be between 5 and 6 feet elevation. A low, 40-foot wide earthen berm will be constructed on the north and east sides of the experimental basin using onsite materials. The tops of the berms will have a 20-foot wide flat surface. The 10-foot wide slopes would have a 10:1 (H:V) grade. The north berms would require about 12 inches of fill. The existing berms on the south and west sides of the experimental basin would not be modified.

A 36-inch diameter high density polypropylene (HDPE) pipe will be installed in the berm along Tecolotito Creek, providing a tidal connection (Figure 4). The culvert will be about 55 feet in length. The berm will be temporarily excavated to a depth of 8 feet with 2:1 (H:V) side slopes to place the culvert. Prior to placement, 1-2 feet of subgrade will be prepared. A geosynthetic fabric, consisting of polypropylene fiber, will be placed on the subgrade, then backfilled with 1 foot of 4-inch minus rock. Another layer of fabric will be placed on top of the rock, then backfilled to the elevation for placing the pipe.

The pipe trench will be backfilled with a high-clay soil mixture to reduce seepage, using on-site materials from excavating the basin. A plastic anti-seepage collar will be placed around culvert on the upstream end. An aluminum canal slide gate will be installed on the upstream end of the culvert (Figure 6) to close the basin to tidal inflows, and/or to control the rate of tidal exchange if so desired during the course of the experiment.

Access to the site during construction will be accomplished along a 15-foot wide vehicle corridor on the south and west berms (Figure 4). The vegetation along the west berm (i.e., Adams Road) will be cleared at ground level, but roots will not be removed in order to allow post-construction regeneration of the native plants installed on this berm in 2000. During construction, vehicles will drive over the crushed layer of existing vegetation which is expected to recover naturally. The south berm will be completely cleared and grubbed because it contains a monoculture of non-native mustard. The top of the south berm will be bladed to remove hummocks or fill voids for vehicle use.

A 2.66-acre experimental basin will be constructed in the southeast corner of Basin L/M (Figure 5). The basin will be excavated to 2.5 feet elevation which will match the bottom elevation of Mesa Road Ditch to allow a full range of tide elevations. A 20-foot wide channel will be created in the

center of the basin with an invert elevation of 2.5 feet. Most of the bottom of the basin will be between 4 and 5 feet elevation (Figure 5). This basin is expected to drain completely each day during both the summer and winter.

A berm will be constructed that extends from the north to the south sides of Basin L/M (Figure 5). This 470-foot long, 40-foot wide earthen berm will be constructed across the center of the basin, roughly along an existing topographic ridge. The berm will be constructed using on-site material from the excavation of the basin. It will tie into higher elevations areas at the north and south ends. The top of the berm will have a 20-foot wide flat surface. The berm will be designed to provide access during construction, and for year-round access to the culvert for emergency purposes. The berm corridor will be cleared and grubbed, then excavated 1-2 feet. A subgrade will be prepared to support truck and equipment loading. A geosynthetic fabric, consisting of polypropylene fiber, will be placed on the bottom of the subgrade, then backfilled with 1-2 feet of 4-inch minus rock. Another layer of fabric will be placed on top of the rock, and then fill will be placed to achieve the design elevation (about 12-18 inches above adjacent marsh areas). A 3-inch layer of gravel will be placed on the surface of the berm. The 10-foot wide slopes on the berm will have a 10:1 (H:V) grade.

The existing berms on the north and south sides of the experimental basin would not be modified.

A 48-inch diameter high density polypropylene (HDPE) pipe will be installed in the berm along Mesa Road Ditch (Figure 5), in the same manner as described for Basin E/F. The culvert will be about 45 feet in length. The berm will be temporarily excavated to a depth of 9 feet with 2:1 (H:V) side slopes to place the culvert. A subgrade will be prepared as described for Basin E/F. The same type of aluminum canal slide gate will be installed on the upstream end of the culvert (Figure 6) to close the basin to tidal inflows, and/or to control the rate of tidal exchange if so desired during the course of the experiment. An anti-seepage collar and high-clay content backfill will also be used, as described for Basin E/F.

Access to the site during construction will be accomplished along a 15-foot wide corridor on the north berm, and then along the new berm across the basin (Figure 5).

The corridor on the north berm will be cleared and grubbed because it contains a monoculture of non-native mustard. The top of the berm will be bladed to remove hummocks or fill voids for vehicle use. Following construction, the temporary vehicle corridor on the north berm will be seeded with low-growing native perennial plants from Goleta Slough to reduce erosion and prevent colonization by weeds. The corridor will be maintained to allow overland travel by vehicles to access the basin and culvert during emergencies. Hence, compacted tire tracks would be allowed. Except in the cases of emergencies, all access to the basin and culvert will be accomplished on foot either from the north or south berm.

A 25-foot wide temporary construction zone will be established around the perimeter of the basin where grading would be prohibited, but overland travel by construction equipment during grading would be allowed.

For each basin, the sides and tops of the berms and the basin slopes between 6 and 7 feet elevation will be seeded with the following plants using seeds collected from the Safety Area Grading Project mitigation site during the period November 2003 through November 2004:

- Alkali heath (*Frankenia salina*)
- Alkali weed (*Cressa truxillensis*)
- Pickleweed (*Salicornia virginica*)
- Salt marsh sand spurry (*Spergularia marina* or *macrotheca*)

5.2.2 Maintenance and Monitoring Program

The Airport proposes to conduct the field experiment for 2 years, at which time the Airport would present results of the experiment to the FAA for review. Three outcomes are possible based on the nature of the results, as follows:

1. Continuation of the experiment because of the need for more reliable data, or for data from years with different runoff and weather conditions
2. Termination of the experiment because the results indicate that the ecological benefits are not being achieved, and/or increased tidal circulation creates an unacceptable increase in bird strike hazard
3. Continuation of the experiment with approval to proceed with plans to implement a larger tide restoration project at Goleta Slough by the Airport and other interested agencies and parties. The location, size, and timing of a future project are unknown at this time.

A maintenance and monitoring program will be implemented for the duration of the experiment. Routine maintenance will include the following tasks: (1) inspections of the culvert and slide gate to detect any blockage, sediment build up, or erosion at the inlet or outlet; (2) removal of obstructing vegetation, debris, and sediment from the inlet and outlet of the culverts; (3) weeding of the basin, including berms, to reduce non-native weeds and facilitate revegetation of construction disturbed areas with native wetland plants; and (4) re-planting of the revegetated portions of the berms and basin to increase native plant cover in the event that the initial seeding is not adequate

In addition, the field experiment will be monitored to assess performance (i.e., are the habitat and hydraulic objectives being met) and if creating tidal conditions increases bird strike hazards compared to conditions in non-tidal basins. Specific elements of the monitoring program include monitoring conditions related to hydrology, vegetation, invertebrates, and bird use.

5.2.3 Monitoring Bird Strike Hazards and Suspension of the Experiment

To prevent any unanticipated effects on bird strike hazards, the proposed field experiment includes a rigorous bird hazard monitoring program and protocol to immediately suspend, or if necessary, terminate the experiment if adverse conditions were observed. Bird surveys will continue for the duration of the experiment. Field biologists will record bird activity in the experimental and control basins on a weekly basis, recording the following information: (1) types and numbers of birds observed; (2) bird activity (e.g., feeding, resting, flying); and (3) movement to, from, and within the experimental basins. A field biologist will spend several hours at each basin at different times of the day throughout the year. In addition, bi-weekly surveys will be conducted at other tidal and non-tidal

basins in Goleta Slough that are not involved in the field experiment in order to provide a broader context for interpreting the data.

The bird observations and types of sightings will be analyzed at the end of each weekly bird survey. The Airport will coordinate with the FAA and USDA Wildlife Services throughout the duration of the experiment, providing quarterly updates on the progress of the experiment, and consulting with them when appropriate based on the above criteria. When it is appropriate to consult with FAA and USDA due to an increase in strike hazard, the Airport would contact both agencies by phone and e-mail with the basis for the consultation, information on the increase in strike hazard observed, and the Airport's recommendations for action.

The tidal connection to the experimental basins will be controlled by mechanical slide gates on culverts. Hence, if it were necessary to suspend the experiment, tidal exchange in the experimental basins can be shut off within hours by mechanically closing the gates. If it is desired to close the tidal connection while the basin is in a dewatered state, the Airport would wait for the next low tide to evacuate the basin, and then close the gate. Up to 12 hours may be necessary to establish a closed and dewatered basin when relying on natural tide action. If it were necessary to temporarily suspend the field experiment independent of the tide level, the Airport will close the gates and then pump water from the basin using a portable sump pump and generator. Airport staff will be responsible for closing the gates upon instruction by the Airport Director.

5.2.4 Restoration of the Experimental Basins after Termination

If the experiment is permanently terminated, the Airport will restore the experimental basins to their pre-project conditions. The slide gates would be removed and the culverts would be plugged with concrete. The basins would be backfilled with imported clean fill with a soil texture that matches the existing soil conditions. Construction work would follow previous procedures relative to access and work areas. Berms would be removed and the basins will be filled until the basin resembles pre-project grade. It is anticipated that backfilling could require at least 2-3 weeks in order to retain a contractor and suitable material. Once the basin has been filled to pre-construction grade, the Airport would turn under pickleweed stems derived from Goleta Slough using a small tractor. Berms would be seeded with native shrubs.

5.3 EVALUATION OF IMPACTS

5.3.1 Impacts to Vegetated Habitat and Mudflats

General Consideration

The proposed project has been designed as a scientific field experiment that can be terminated, and the study basins restored to pre-project conditions, as described in the project description (URS Corporation, 2003). Pre-project topography, hydrologic conditions, and vegetation are expected to be achieved within two years. In this scenario where the results of the field experiment are not favorable, the project would not result in a long-term loss or conversion of habitat. Instead, the project would have caused a short-term (4 years) disruption of habitat conditions in portions of the study basins. This short term impact is not considered significant because the interim habitat conditions (e.g., mudflats and young pickleweed marsh) would provide habitat value in and of themselves, and would also represent new and under-represented habitats in Goleta Slough.

Effects of Experiment

The proposed field experiment would result in the conversion of the following habitats for the duration of the experiment, and possibly indefinitely if the experiment is successful and the Airport decides to convert the new experiment basins to permanent tidal basins:

- Non-tidal pickleweed marsh on the basin bottoms will be converted to a mosaic of tidal mudflat and tidal pickleweed marsh
- Non-tidal mudflats/saltflats on the basin bottoms will be converted to a mosaic of tidal mudflat and tidal pickleweed marsh
- Non-tidal pickleweed marsh on the basin bottoms will be disturbed to construct a temporary access road, but restored to similar pickleweed/alkali heath marsh habitat
- Non-native weeds along the proposed access roads will be removed and replaced with native wetland herbs and shrubs

The types of habitats to be affected in each basin are shown on Figure 5, and summarized in Table 2.

TABLE 2
HABITAT IMPACTS

Area of Interest	Habitat Conversion	Acreage		
		Basin E/F	Basin L/M	Total
Total experimental basin bottoms (not including berms)	Non-tidal pickleweed marsh and mudflats/saltflats converted to tidal mudflats and pickleweed marsh	1.93	2.66	4.59
New berms in the basin bottom	Temporary disturbance of non-tidal pickleweed marsh altering topography, but maintaining the same vegetation	0.51	0.62	1.13
Temporary construction disturbance zone on perimeter of basin, at culvert location, and at ramp into basin	Temporary disturbance to a mixture of pickleweed marsh, quail bush scrub, coyote bush scrub, and non-native weeds. Restored to native habitat after construction has ended	0.50	0.79	1.29
Temporary access road to basin, located on berms	Temporary disturbance non-native weeds. Restored to native habitat after construction has ended	0.28	0.05	0.33

The project will involve the following temporary habitat impacts:

- Temporary disturbance to pickleweed marsh, quail bush scrub, coyote bush scrub, and non-native weeds in a temporary construction disturbance zone on perimeter of the basins, at culvert locations, and at the ramp into Basin E/F
- Temporary disturbance to non-native weeds on the south berm at Basin E/F and north berm at Basin L/M due to the establishment of access roads
- Temporary disturbance to native plants established on the west berm of Basin E/F as part of the Safety Area Grading project

The potential long-term conversion of habitats in the experimental basins is not considered an adverse impact because the proposed new tidal habitats are desirable as described in the Tide Restoration Feasibility Study. The new habitats are under-represented in Goleta Slough, and the tidal habitats in the slough are in poor conditions. In general, tidal saltmarsh provides higher productivity and species than non-tidal habitats with similar vegetation types. Hence, the habitat conversions associated with the project would provide an overall long-term ecological benefit to Goleta Slough.

The temporary habitat impacts associated with construction of the experimental basins are not considered significant because: (1) these habitats will be readily restored after construction, based on the Airport's prior experience with similar disturbances; and (2) the interim habitat conditions while new vegetation is being developed provides value to invertebrates and birds because such early successional habitats are scarce in Goleta Slough.

5.3.2 Impacts to Aquatic Species and Water Quality

Construction of the proposed experimental basins will involve substantial earthwork as the basins are lowered. Hence, there is a potential for disturbed soils to be discharged to Tecolotito Creek or Mesa Road Ditch due to direct dumping, accidental spills, and/or post-grading erosion during the winter. Increased sedimentation in the tidal channels of Goleta Slough could adversely affect aquatic invertebrates, insects, and fish. However, it should be noted that the water in the tidal channels of Goleta Slough are naturally high in turbidity and suspended sediments. The proposed project is not expected to cause a significant increase in sediments to the Slough, that would cause biological impacts, for the following reasons: (1) earthwork would be conducted in the late summer and fall when soils are dry and there is no rain or runoff that could convey sediments to the tidal channels; (2) the Best Management Practices to be employed during and after construction, such as silt fences along the margins of construction work, would reduce offsite sedimentation to minimal levels; and (3) the basin bottoms will be stabilized with pickleweed plants and erosion control mats after grading and prior to opening the culverts for tidal exchange.

Installation of the culverts in the berms of Basins E/F and L/M will require work in Tecolotito Creek and Mesa Road Ditch, respectively. At each site, temporary cofferdams will be installed to isolate the berms from the tidal channels and allow the earthwork to proceed without contact with water. Once the culverts are installed, the outer banks will be stabilized with an erosion control mat and pickleweed plants to prevent erosion. No significant bank erosion and resultant sedimentation is anticipated upon removal of the cofferdams.

5.3.3 Impacts to Southern Steelhead

As noted above, the southern steelhead is not known, or expected to occur, in Goleta Slough. However, there is a remote possibility that steelhead could attempt migration up Tecolotito Creek during certain winters. Tecolotito Creek in the slough does not provide suitable spawning and rearing habitat. Hence, steelhead would not be present during the construction period (late summer and fall). Based on these considerations, the construction of the study basins is not expected to affect steelhead.

5.3.4 Impacts to Belding Savannah Sparrow

This resident endangered species occurs throughout Goleta Slough in non-tidal and tidal pickleweed marsh. The number and locations of territories vary considerably from year to year based in part on the water levels in the non-tidal basins. This species nests in pickleweed stands above the high water levels. It uses pickleweed marsh throughout the slough for perching and foraging.

The proposed construction of the experimental basins would convert pickleweed marsh habitat that is suitable for nesting (due to its high elevation) to mudflat or pickleweed marsh habitat that would not be suitable for nesting. It is estimated that about one-half of the existing basin bottoms, 2.25 acres, contain suitable nesting habitat for the Belding savannah sparrow. The number of nesting birds that would be displaced by this habitat conversion varies from year to year. In 2001 and 2003, only 4 territories were observed in Basin E/F, all of which were located outside of the proposed experimental basin boundaries. Based on this information, it appears that few, if any, savannah sparrow territories would be displaced in Basin E/F.

The number of territories in Basin L/M was 3 in 2001 and 13 in 2003. Six of the 13 territories observed in 2003 occurred in the area of direct impact. Based on these results, the proposed experimental basin in Basin L/M could displace several nesting territories and several more unpaired birds.

The loss of non-tidal pickleweed marsh in Basins E/F and L/M, some of which is suitable for nesting and all of which is suitable for foraging and perching by the savannah sparrow, is not considered an adverse, but not significant impact for the following reasons:

- The resident population in Goleta Slough appears to be highly mobile and adaptable, and as such, the birds will adjust to the removal of suitable nesting habitat in the experimental basins by finding suitable habitat in these and other basins
- The conversion of 2.5 acres of non-tidal pickleweed marsh to tidal habitats would be a small fraction of the total pickleweed habitat available to the savannah sparrow in Goleta Slough (about 150 acres)
- The resident population appears to be very productive; hence, the loss of 2.5 acres of habitat is not expected to adversely affect the stability and long-term reproductive success of the population
- The newly created tidal pickleweed marsh in the experimental basins will provide high quality habitat for the sparrow because the water levels will be more predictable, and plant productivity is expected to be greater than in non-tidal basins

5.3.5 Temporary Construction Disturbances

Construction work will increase noise and human activity at and near the work sites, which will discourage bird use of the basins, at least during the day when equipment and workers are present. This impact is not considered significant because: (1) the construction work areas are very small relative to the entire Goleta Slough; (2) the work will be temporary, short-term, and restricted to daytime hours; and (3) construction work will occur during the period August 1, 2004 to November 1, 2004 when the birds are not breeding in Goleta Slough.

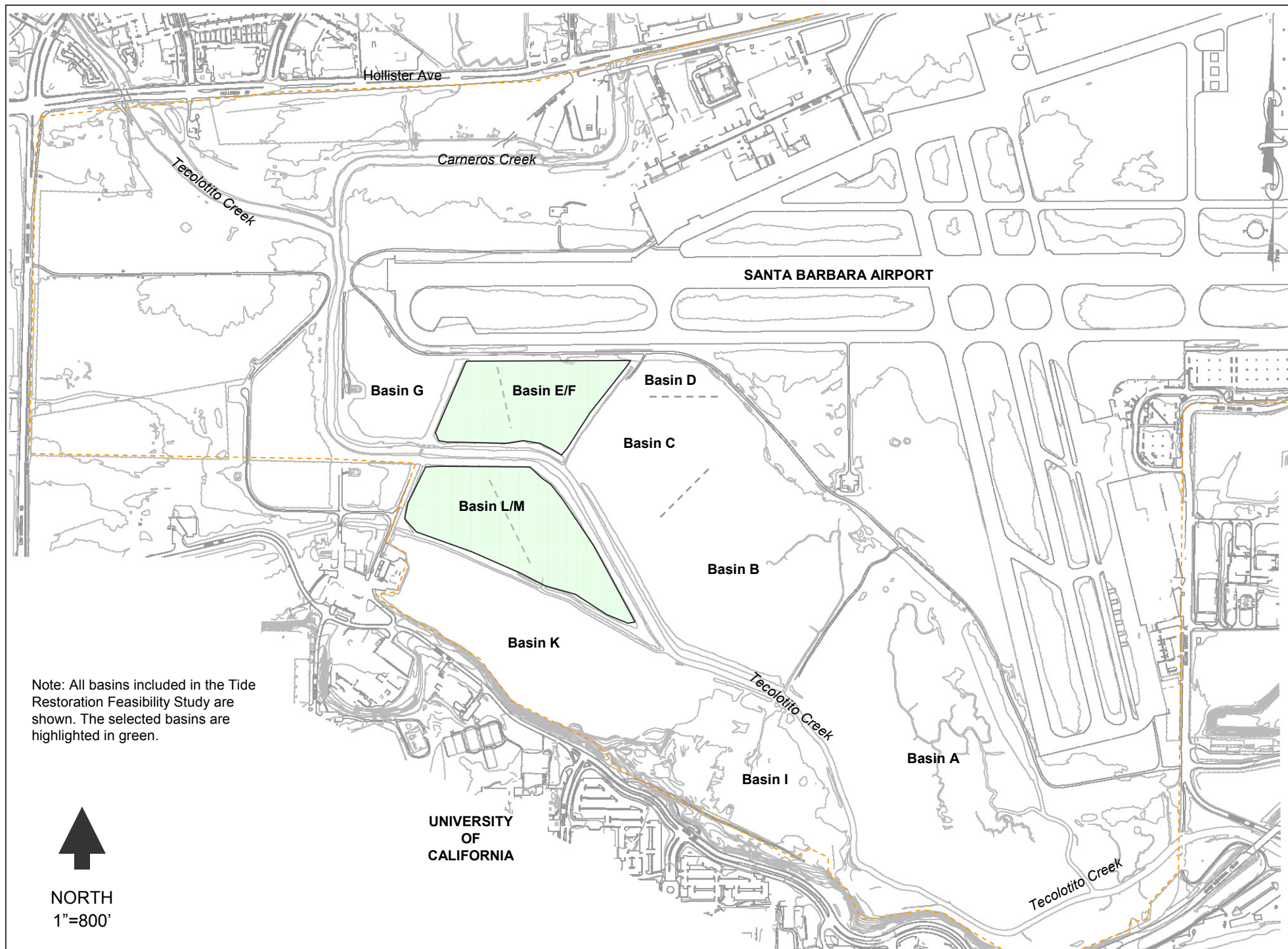


Figure 1. Location of Field Experiment Basins


NORTH
1"=90'



Figure 2. Air Photo of Study Basins

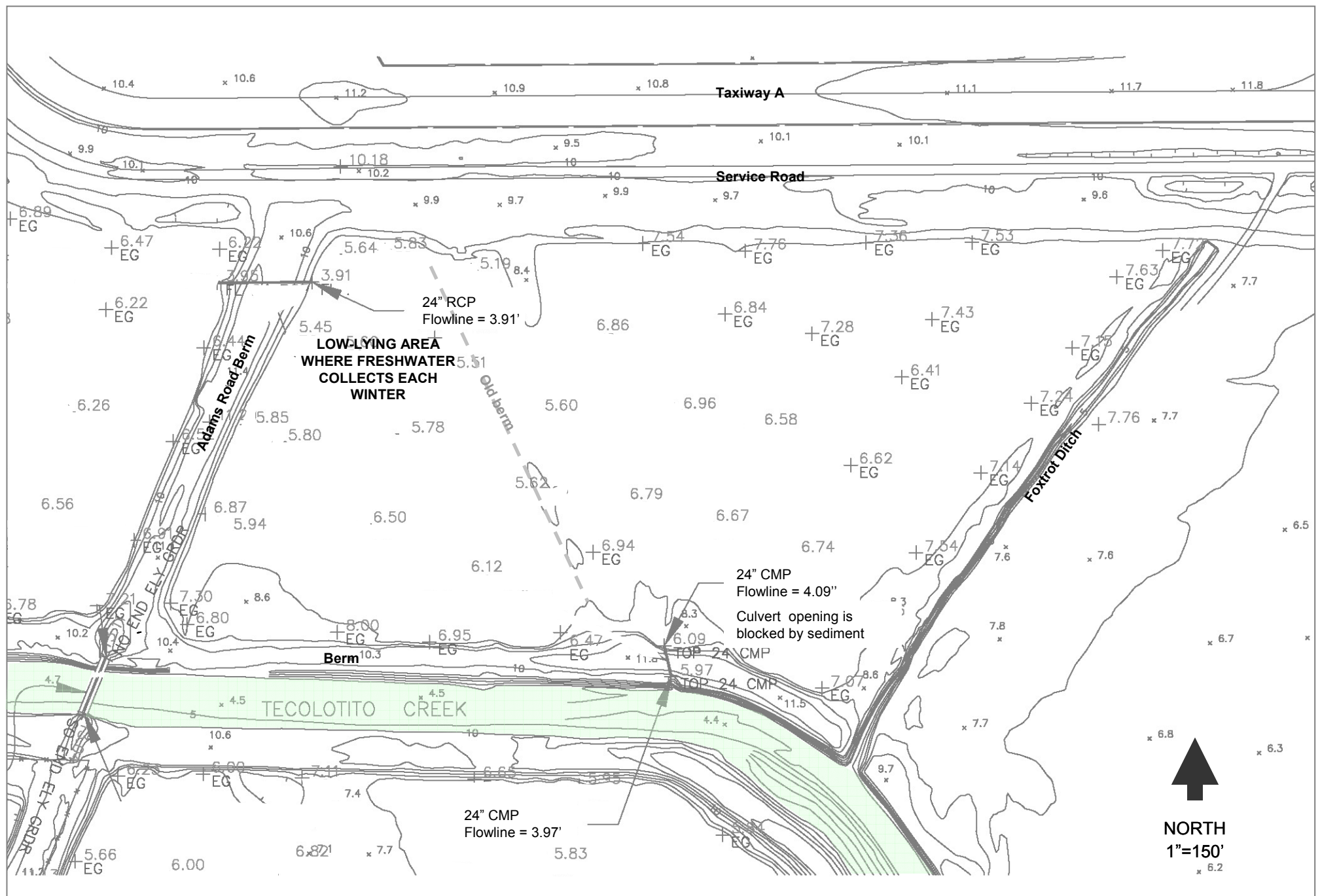


Figure 3. Existing Conditions at Basin E/F




 NORTH
 1"=90'

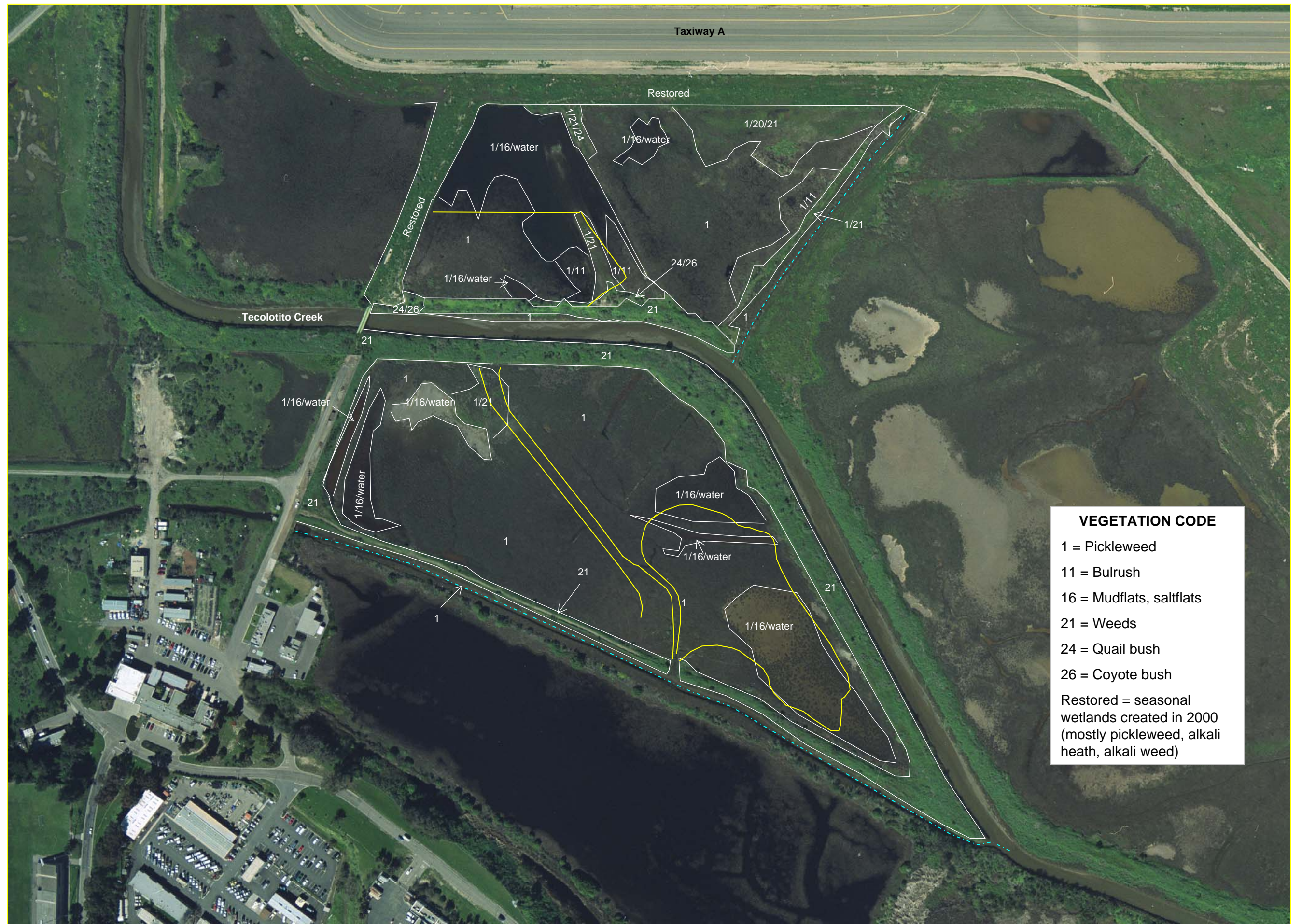


Figure 5. Vegetation Types at Study Basins

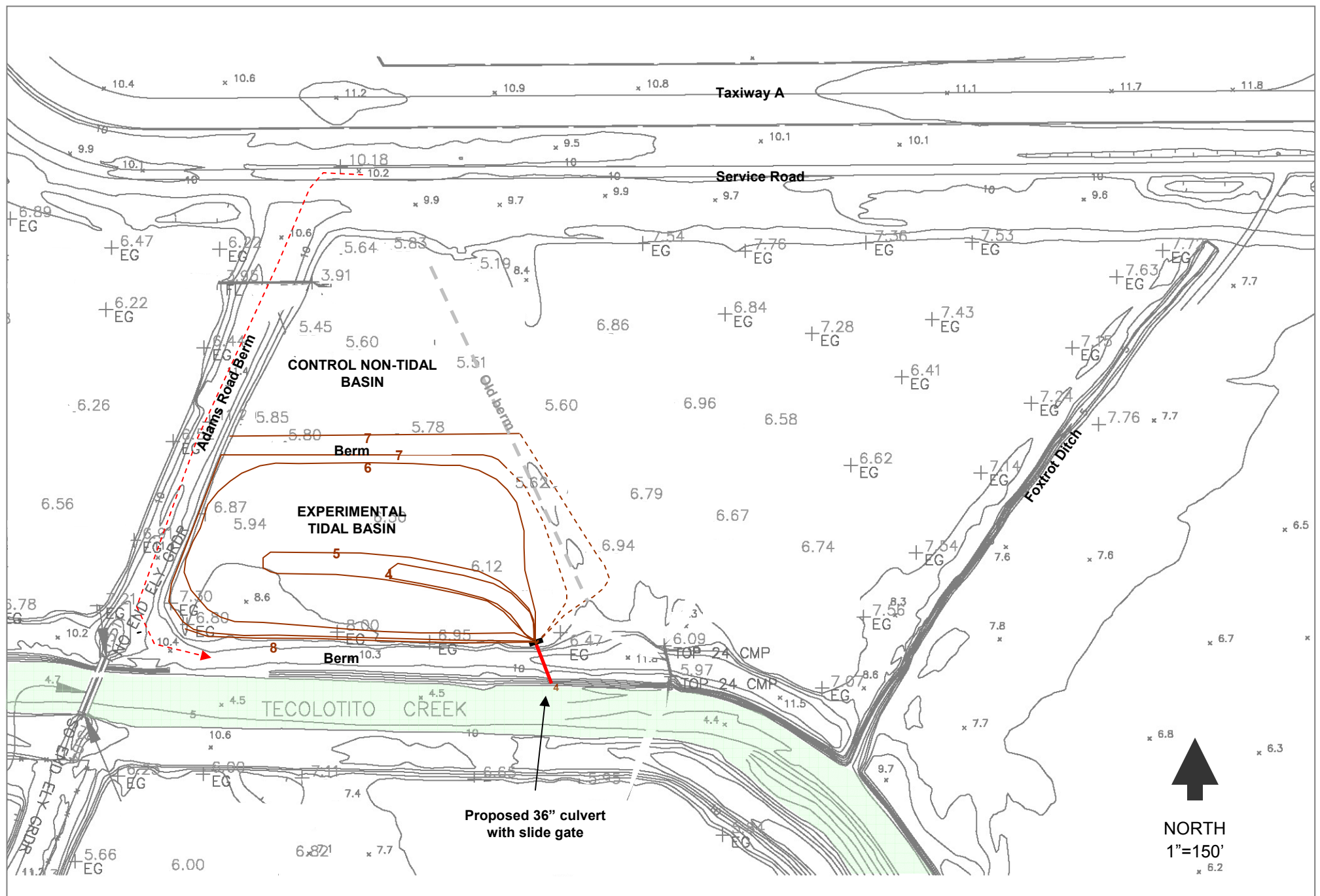


Figure 6. Proposed Experimental Basin E/F

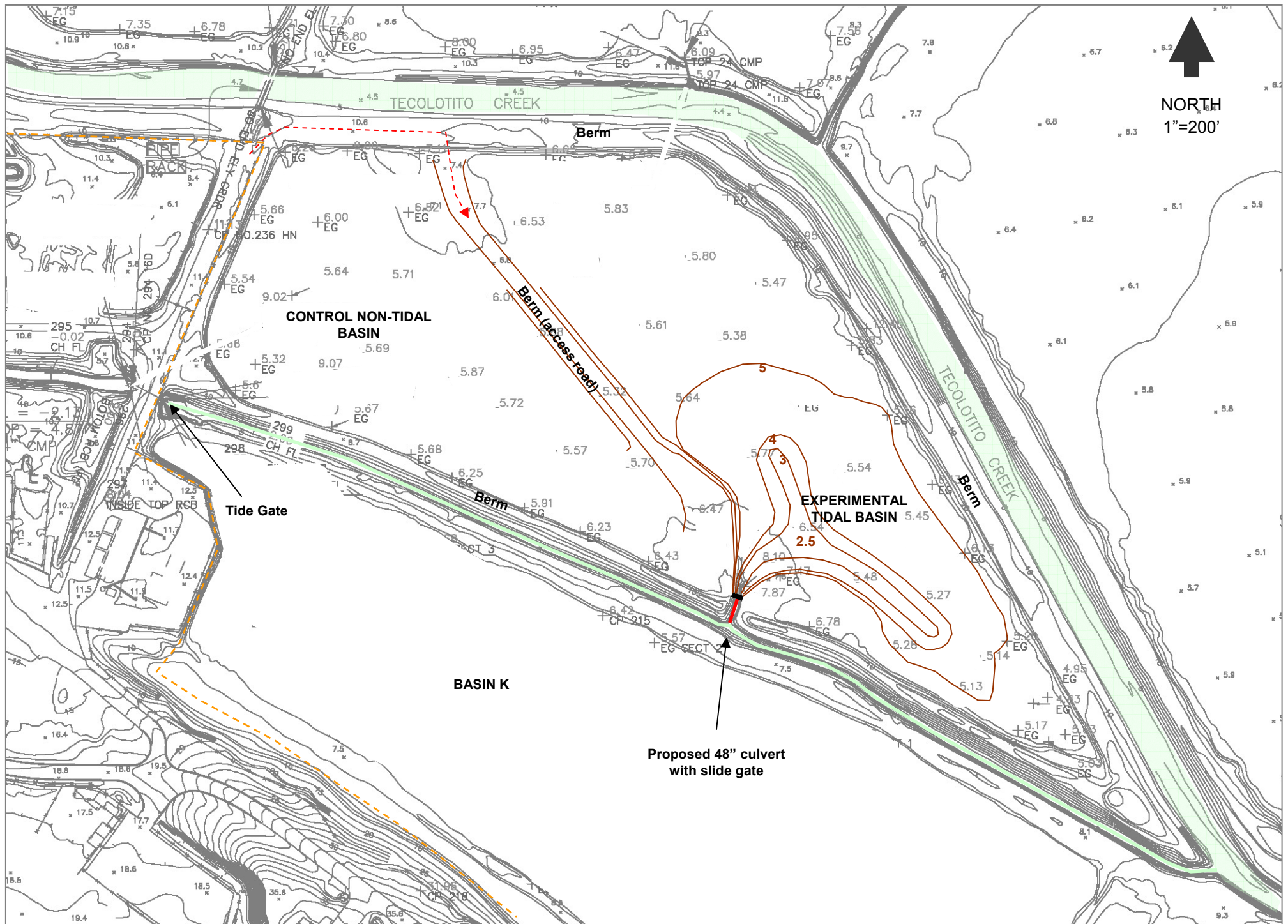


Figure 7. Proposed Experimental Basin L/M

NORTH
1"=90'



Figure 8. Sighting of Belding Savannah Sparrows in Study Basins



Photograph No. 1. View of northwest corner of Basin E/F where precipitation and runoff collect. View to the north. March 2003.



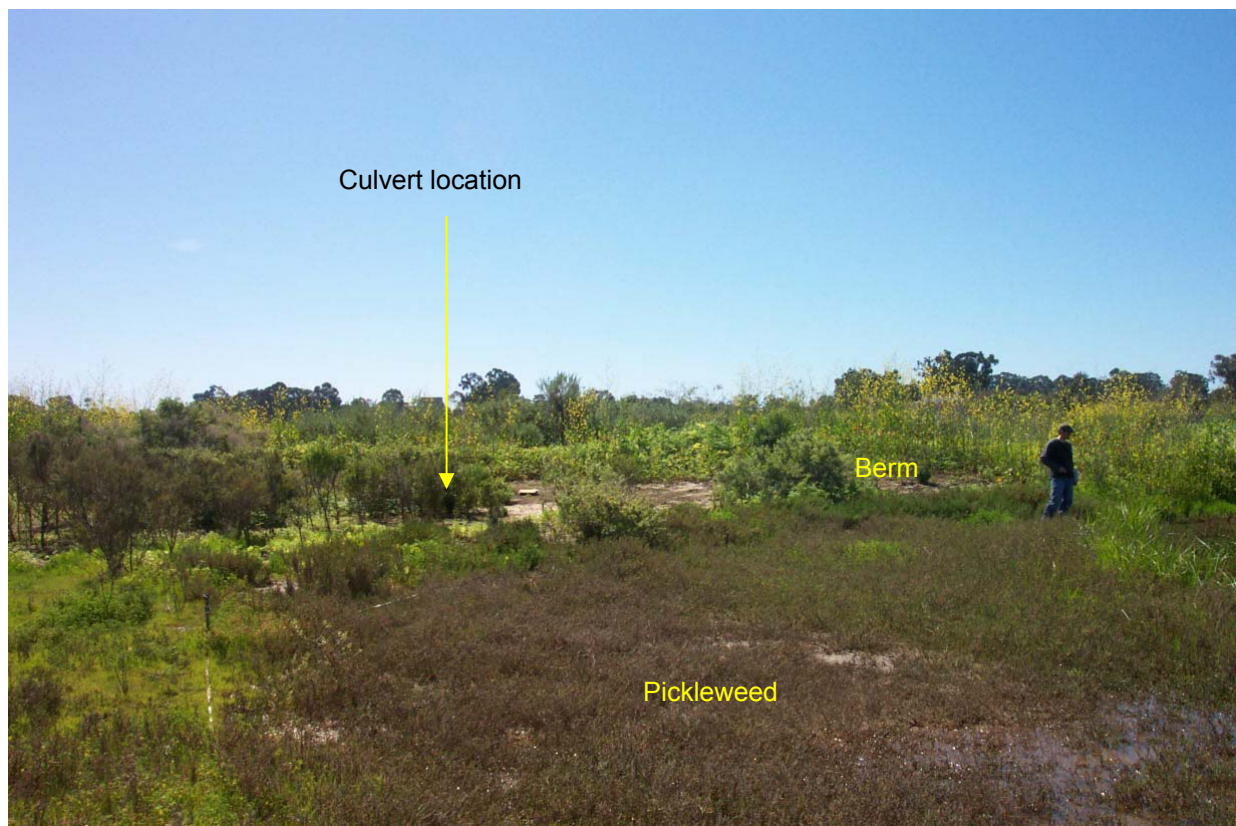
Photograph No. 2. View of southwest corner of Basin E/F where the experimental basin will be installed. View to the southeast. March 2003.



Photograph No. 3. View of the southwest corner of Basin E/F where the experimental basin will be located. View to the west. March 2003.



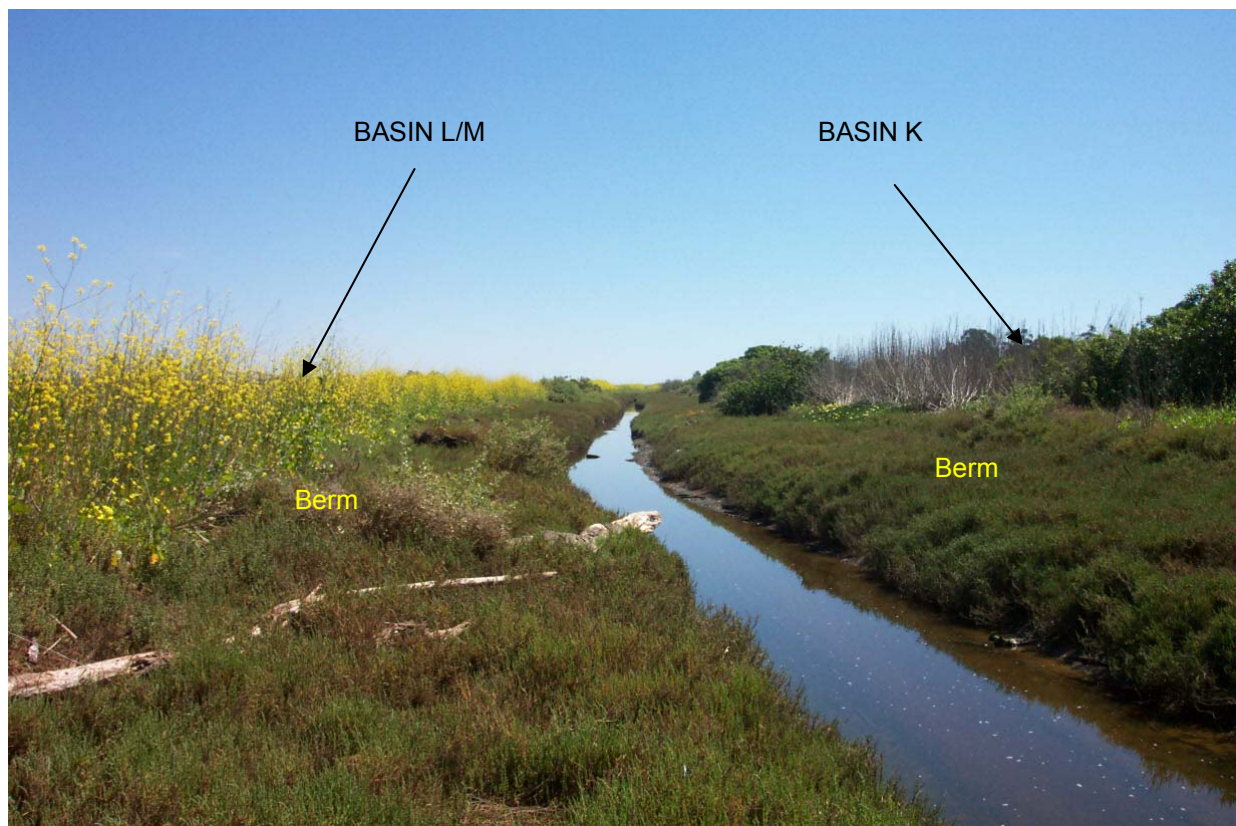
Photograph No. 4. View of the south edge of the proposed experimental basin location. View to the west. Existing block culvert is located in the foreground.



Photograph No. 5. View of the location of the proposed culvert and slide gate at Basin E/F. View to the south.



Photograph No. 6. View of Tecolotito Creek and north bank where the proposed culvert will be located (in the foreground). Creek is at about 4 feet elevation.



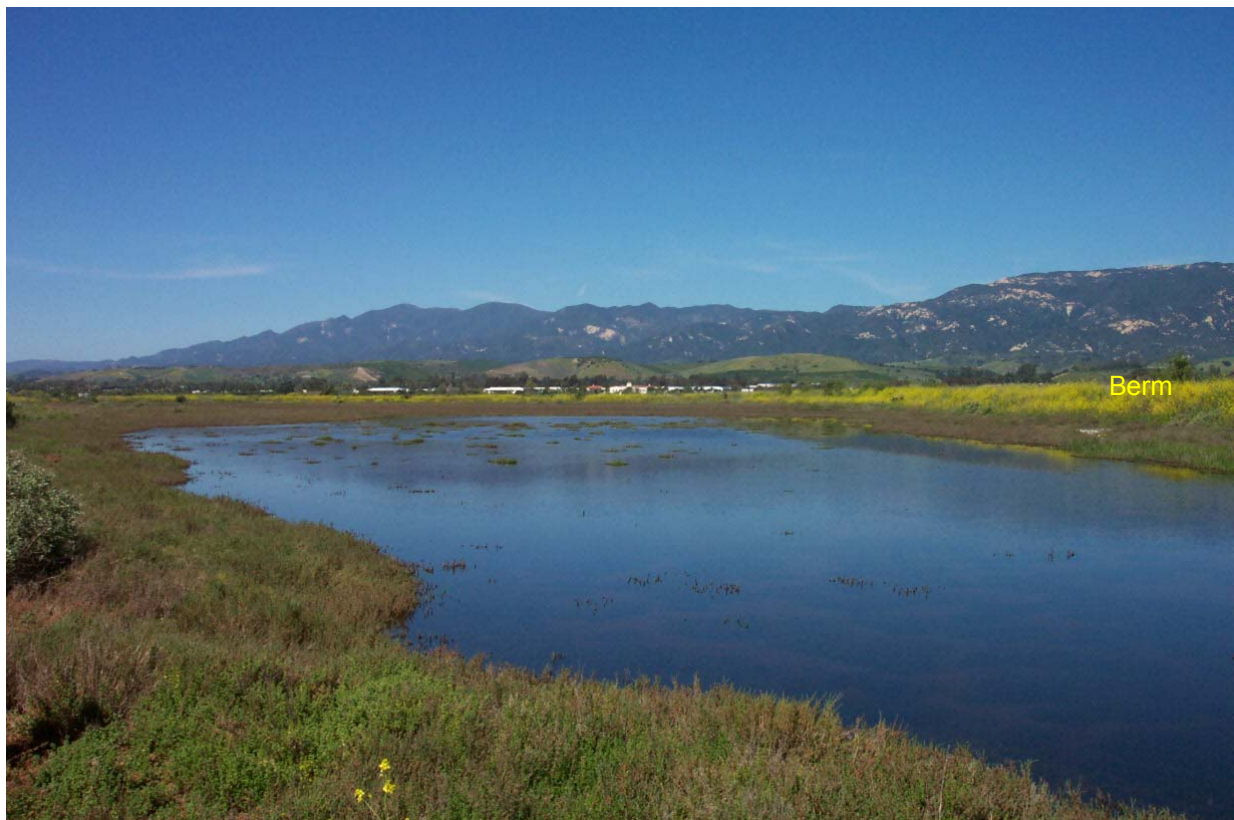
Photograph No. 7. View of Mesa Road Ditch immediately upstream of the tide gate. View to the east.



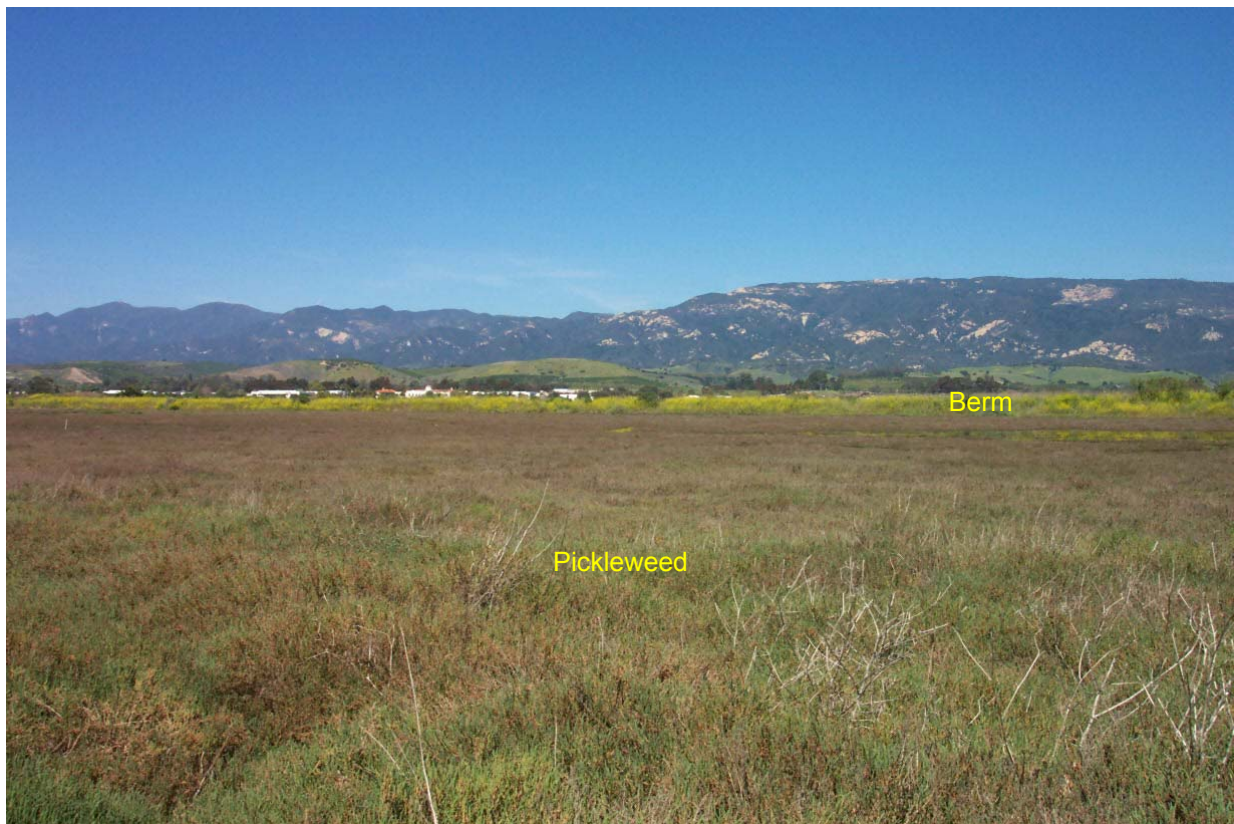
Photograph No. 8. View of the center of Basin L/M. View to the east. March 2003.



Photograph No. 9. View of the location of the experimental basin in Basin L/m. View to the east. This is a low-lying area that collects precipitation in wet years. March 2003.



Photograph No. 10. View of the proposed experimental basin location, which contained water in March 2003. View to the northwest.



Photograph No. 11. View of route of the access road to the experimental basin. View to the north.



Photograph No. 12. View of the control basin located west of the proposed experimental basin. View to the northwest.



Photograph No. 13. View of the existing opening to Mesa Road Ditch. View to the south. The proposed culvert and slide gate will be installed at this location.

**PROJECT DESCRIPTION
SANTA BARBARA AIRPORT
TIDE RESTORATION FIELD EXPERIMENT
GOLETA SLOUGH**

September 2003



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Appendix C Preliminary Plans, Sheets 1 - 16 (under separate cover)

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2. Overview of Basin E/F
3. Overview of Basin L/M

1.0 INTRODUCTION

The Santa Barbara Airport (Airport) was constructed within the historic boundaries of Goleta Slough. Only a small portion of the Goleta Slough wetlands and tidal channels remain. Significant portions of Goleta Slough are non-tidal due to historic diking and filling. Existing tidal habitats have low to moderate quality because tidal influence has been reduced.

For many years, the Airport and other agencies and environmental organizations have sought to restore wetlands in Goleta Slough by increase the extent of tidal circulation. The Federal Aviation Administration (FAA) has expressed concern that restoring tidal circulation to portions of Goleta Slough could modify bird activity in and near the airfield, and possibly increase aviation bird strike hazards.

In order to address these concerns, the Airport conducted a tidal restoration feasibility study. In early 2002, the Airport issued the Draft Goleta Slough Tidal Restoration Study, Phase I – Feasibility Study for a Field Experiment (Study) to the Federal Aviation Administration (FAA) and United States Department of Agriculture (USDA) Wildlife Services for review. The draft study evaluated the feasibility of implementing a short-term field experiment in Goleta Slough to increase tidal circulation for wetland enhancement purposes. The study included an evaluation of the anticipated ecological benefits of the proposed field experiment, and the effect on bird strike hazard at the Santa Barbara Airport. The study recommended creation of two small tidal basins that would be monitored for 2 years, and possibly more if necessary to acquire meaningful results. The study concluded that the recommended field experiment could be implemented without increasing bird strike hazards at the Airport.

The overall objective of the tidal restoration experiment is to provide empirical data to assist in determining the feasibility of a long-term tidal restoration program at Goleta Slough. The implementation of a small-scale pilot project will provide an opportunity to observe the hydrologic and ecological effects of increasing tidal circulation to a non-tidal area of the slough. The experiment will be monitored to assess the success in establishing the desired tidal habitats, identify potential implementation and maintenance problems, and assess the effects of habitat changes on aviation bird strike hazards. Empirical data from the field experiment will provide a solid scientific foundation for assessing the feasibility of a larger program. The results of the experiment will also be used to refine the approach and site design of a larger restoration project.

Under the proposed field experiment, two small tidal basins will be created by excavating portions of larger non-tidal basins, and installing culverts that connect to tidal channels. Each experimental basin will be located near a “control basin” (i.e., an existing non-tidal basin) to allow a comparison of the environmental changes due to tidal circulation. This experimental design will also allow a comparison of bird use in tidal and non-tidal areas to assess the effects on the bird strike conditions at the Airport. Conditions in the experimental and control basins will be jointly monitored on a continuous basis.

The field experiment is temporary and small in scale, thereby avoiding any irreversible, system-wide changes in the environmental conditions of the slough. The experimental tidal basins can be restored to pre-project conditions if the results of the experiment are not favorable. In addition, the effects on bird strike hazard conditions at the Airport will be carefully monitored during the field experiment to detect adverse trends. The field experiment includes a contingency plan to immediately terminate the experiment if significant bird strike hazards arise attributable to the field experiment.

The proposed experimental tidal basins would be constructed by the Airport on City property during the period August through November 2004 using grant funding from the State Coastal Conservancy. The field experiment is planned to be conducted for two years, ending in November 2006, unless it is determined that the experiment should be terminated earlier due to public safety concerns, or if the experiment should be extended beyond this date to collect more information.

2.0 OVERVIEW OF THE PROJECT SITES

The experimental basins will be located within portions of two non-tidal basins in Goleta Slough on Airport property – Basin E/F and Basin L/M (Figure 1). Descriptions of the two larger basins are provided below.

Basin E/F is a 13-acre basin located adjacent to Taxiway A (Figure 1). The berm on the west side of the basin is a remnant of Adams Road, and contains a sewer line that extends across Tecolotito Creek to Goleta West Sanitary District (Figure 2). The top of the berm contained an asphalt road which was removed and restored to native habitat in 2000. The basin is accessed by a gravel service road between Taxiway A and the north side of the basin.

Basin E/F previously had a low berm in the middle which was removed in 2000 as part of the Safety Area Grading restoration project, allowing free movement between the two low-lying areas of the basin (Figure 2). The bottom elevations of the basin range from 5.5 to 7 feet. The basin is connected to Tecolotito Creek through a 24-inch diameter culvert in the south berm. The invert elevation of the culvert is 4 feet, which would theoretically allow tidal inflow and outflow. (Note: all tide elevations are relative to Mean Lower Low Water [MLLW], which is roughly equivalent to the topographic map datum of NAVD 88). However, sediment deposits block the inlet to the culvert. As a result, this basin usually only has freshwater derived from stormwater runoff that discharges to the basin from a storm drain on the north side of the basin. The northwest corner of the basin is lower than the rest of the basin. It collects precipitation and runoff which can persist for months during wet years while the remainder of the basin is dry.

Basin L/M is located on the south side of Tecolotito Creek and encompasses about 16.9 acres (Figure 1). It is a single unit, but has two major “cells” in the southwest and southeast corners of the basin created by a small ridge in the middle of the basin (Figure 3). These low-lying areas collect precipitation and are typically ponded for many months of the year. The bottom elevations of the basin range from 5.5 to 6 feet.

Adams Road creates the berm on the west side of the basin. Access to this basin is available from two gates on the east side of Adams Road. The north and east berms are located along Tecolotito Creek. The south side of the basin contains a small berm adjacent to Mesa Road Ditch. There is a small opening to the basin on the south side that is about four feet wide. The invert of the channel is about 4 feet, sufficient to allow tidal circulation. However, sediment deposits on the inlet of the channel (up to 7 feet elevation) block all but the extreme high tides. As a result, this basin is usually only filled with freshwater derived from direct precipitation.

3.0 PERMITS AND APPROVALS

The proposed project will require the following permits and approvals:

- Coastal Development Permit issued by the City’s Planning Commission (appealable to Coastal Commission)
- Design approval by Architectural Board of Review (focused on landscaping)
- Grading and building permits from the City Building Department
- Corps of Engineers 10/404 permit for work in wetlands and tidal channels
- California Department of Fish and Game Streambed Agreement for work in Tecolotito Creek and Mesa Road Ditch
- Endangered species clearance by the U.S. Fish and Wildlife Service and National Marine Fisheries Service (issued through the Corps permit process)
- Regional Water Quality Control Board – 401 water quality certification for the Corps permit, and NPDES Waste Discharge Requirements for dewatering operations

4.0 PROJECT ELEMENTS

The project consists of the following specific elements, which are described in detail in the following subsections:

- Construction of Experimental Basins
- Habitat and Bird Strike Monitoring
- Revegetation Maintenance and Monitoring
- Restoration of the Experimental Basins

4.1 CONSTRUCTION OF EXPERIMENTAL BASINS

4.1.1 Basin E/F

A 2.02-acre experimental basin will be constructed in the southwest corner of Basin E/F (Sheet 5, Appendix C). The basin will be excavated to about 4 feet elevation, which will match the bottom elevation of Tecolotito Creek, thereby allowing the fullest range of tide elevations possible. A 20-foot wide channel will be created in the center of the basin. Most of the bottom of the basin will be between 5 and 6 feet elevation (Sheet 9, Appendix C).

In the winter when the mouth of Goleta Slough is open, the low tide is at or below 0 feet elevation. Hence, this basin will drain to Tecolotito Creek during low tide events unless the creek is full with runoff from the watershed. During the summer when the mouth of Goleta Slough is closed, the lowest tide elevation during the day is typically 3.5 to 4 feet. Theoretically, the basin will drain each day. However, due to the high attenuation of tides in the summer, it is likely that a small amount of water will remain in the bottom channel of the basin, up to 4.5 feet elevation.

A low, 40-foot wide earthen berm will be constructed on the north and east sides of the experimental basin using onsite materials. The top of the berms will have a 20-foot wide flat surface that would be available for vehicle use in emergencies only. The 10-foot wide slopes would have a 10:1 (H:V) grade. The berms would require about 12 inches of fill. The existing berms on the south and west sides of the experimental basin would not be modified.

A 36-inch diameter corrugated metal pipe (CMP) will be installed in the berm along Tecolotito Creek, providing a tidal connection (Sheet 11, Appendix C). The culvert will be about 55 feet in length. The berm will be temporarily excavated to a depth of 8 feet with 2:1 (H:V) side slopes to place the culvert. The trench will be backfilled with a high-clay soil mixture to prevent seepage. A one-foot thick layer of 4 inch minus gravel will be placed below the culvert to stabilize the subgrade. An aluminum canal slide gate will be installed on the upstream end of the culvert (see Sheet 11, Appendix C) to close the basin to tidal inflows, and/or to control the rate of tidal exchange if so desired during the course of the experiment.

Access to the site during construction will be accomplished along a 15-foot wide vehicle corridor on the south and west berms (see Sheet 12, Appendix C). This corridor will not be graded. Instead, the existing vegetation will be crushed by vehicle tires, then lightly groomed with a small backhoe to

remove hummocks or fill voids. During construction, vehicles will drive over the crushed layer of existing vegetation which is expected to recover naturally.

Following construction, the temporary vehicle corridor on the west and south berms will be seeded with low-growing native perennial plants from Goleta Slough to reduce erosion and prevent colonization by weeds. The corridor will be maintained to allow overland travel by vehicles to access the culvert during emergencies. Hence, compacted tire tracks would be allowed. Except in the cases of emergencies, all access to the basin and culvert will be accomplished on foot.

Construction equipment will access the basin at a single ramp on the west berm in order to avoid disturbance to the other berms. A 25-foot wide temporary construction zone will be established around the perimeter of the basin where grading would be prohibited, but overland travel by construction equipment during grading would be allowed.

During the clearing and grubbing of the experimental basin, the Airport will collect all pickleweed vegetation (stems and roots) and temporarily store this material near the bunker west of Basin G and south of Runway 7-25. There are flat upland areas associated with this bunker and its access road where this material could be windrowed and watered while grading is completed. Upon completion of grading, the pickleweed material will be broken into small pieces (6 inches lengths) and lightly turned into the soils of the basin above elevation 5 feet (Sheet 12, Appendix C). Pickleweed readily sprouts from stem and root cuttings and is expected to become quickly established as the winter progresses. No irrigation is planned for the basin bottom. It will be weeded as described in Section 4.3.

No pickleweed will be placed in the tidal channel in the center of the basin, which will be inundated most of the time.

The sides and tops of the north and east berms, and the basin slopes between 6 and 7 feet elevation (encompassing about 0.9 acre) will be seeded with the following plants using seeds collected from the Safety Area Grading mitigation site during the period November 2003 through November 2004:

- Alkali heath (*Frankenia salina*)
- Alkali weed (*Cressa truxillensis*)
- Pickleweed (*Salicornia virginica*)
- Salt marsh sand spurry (*Spergularia marina* or *macrotheca*)

The amount of seed collected will depend upon the available seed crop. A total of 27 pounds are required to meet the seeding rate of 30 lbs per acre for the new berms at Basin E/F. Seeds will be broadcast over the tops and slopes of the berms, then disked to a depth of 1-2 inches using a small tractor. When the seeds are being turned under, fresh pickleweed stems will also be included, derived from cuttings from the basins. The seeded areas will not be irrigated. They will be seeded in December 2004, immediately prior to the winter rains. It is anticipated that the above species will become established by natural rainfall during the course of the field experiment, and that a more natural restoration process without the use of irrigation would minimize weed colonization and facilitate establishment of the most suitable mix of species. The seeded areas will be weeded as described in Section 4.4.

The vehicle corridor along the west and south berms and the temporary ramp to the basin will be seeded in a similar manner. They will be weeded as described in Section 4.4.

The 25-foot wide temporary construction disturbance zone outside the north and east berms will be allowed to revegetate naturally due to the proximity of pickleweed vegetation. However, these areas will be weeded as described in Section 4.4.

4.1.2 Basin L/M

A 2.66-acre experimental basin will be constructed in the southeast corner of Basin L/M (Sheets 6-8, Appendix C). The basin will be excavated to 2.5 feet elevation which will match the bottom elevation of Mesa Road Ditch to allow a full range of tide elevations. Unlike Basin E/F, a berm will not be constructed to create the basin. Instead, the basin will be established by excavation only. A 20-foot wide channel will be created in the center of the basin with an invert elevation of 2.5 feet. Most of the bottom of the basin will be between 4 and 5 feet elevation (Sheets 5-8, Appendix C). This basin is expected to drain completely each day during both the summer and winter.

In order to allow vehicular access the basin, a berm must be constructed from the north side of Basin L/M. A 470-foot long, 40-foot wide earthen berm will be constructed across the center of the basin, roughly along an existing topographic ridge. The berm will tie into higher elevations areas at the north and south ends. The top of the berm will have a 20-foot wide flat surface. It will have a 1-foot thick layer of 6 inch minus rock to provide a subgrade for all-weather access. The 10-foot wide slopes would have a 10:1 (H:V) grade. The berm would require about 12 to 24 inches of fill. The existing berms on the north and south sides of the experimental basin would not be modified.

A 36-inch diameter corrugated metal pipe (CMP) will be installed in the berm along Mesa Road Ditch, in the same manner as described for Basin E/F (Sheet 11, Appendix C). The culvert will be about 45 feet in length. The berm will be temporarily excavated to a depth of 9 feet with 2:1 (H:V) side slopes to place the culvert. The trench will be backfilled with a high-clay soil mixture to prevent seepage. A one-foot thick layer of 4 inch minus gravel will be placed below the culvert to stabilize the subgrade. An aluminum canal slide gate will be installed on the upstream end of the culvert (see Sheet 11, Appendix C) to close the basin to tidal inflows, and/or to control the rate of tidal exchange if so desired during the course of the experiment.

Access to the site during construction will be accomplished along a 15-foot wide corridor on the north berm, and then along the new berm across the basin (see Sheets 5-8, Appendix C). The corridor on the north berm will not be graded. Existing vegetation will be crushed by vehicle tires, then lightly groomed with a small backhoe to remove hummocks or fill voids. During construction, vehicles will drive over the crushed layer of existing vegetation.

Following construction, the temporary vehicle corridor on the north berm will be seeded with low-growing native perennial plants from Goleta Slough to reduce erosion and prevent colonization by weeds. The corridor will be maintained to allow overland travel by vehicles to access the basin and culvert during emergencies. Hence, compacted tire tracks would be allowed. Except in the cases of emergencies, all access to the basin and culvert will be accomplished on foot either from the north or south berm.

A 25-foot wide temporary construction zone will be established around the perimeter of the basin where grading would be prohibited, but overland travel by construction equipment during grading would be allowed.

During the clearing and grubbing of the experimental basin, the Airport will collect all pickleweed vegetation (stems and roots) and temporarily store this material on the property owned by the California Department of Fish and Game west of Basin L/M. The Airport would acquire a temporary construction easement to store the plant material on flat upland areas where it can be windrowed and watered while grading is completed. Upon completion of grading, the pickleweed material will be broken into small pieces (6 inches lengths) and lightly turned into the soils of the basin above elevation 4 feet (Sheet 13, Appendix C). Pickleweed readily sprouts from stem and root cuttings and is expected to become quickly established as the winter progresses. No irrigation is planned for the basin bottom. It will be weeded as described in Section 4.4.

No pickleweed will be placed in the tidal channel in the center of the basin, which will be inundated most of the time.

The sides and tops of the access berm (about 0.4 acre) will be seeded with the following plants using seeds collected from the Safety Area Grading mitigation site during the period November 2003 through November 2004:

- Alkali heath (*Frankenia salina*)
- Alkali weed (*Cressa truxillensis*)
- Pickleweed (*Salicornia virginica*)
- Salt marsh sand spurry (*Spergularia marina* or *macrotheca*)

The amount of seed collected will depend upon the available seed crop. A total of 12 pounds are required to meet the seeding rate of 30 lbs per acre for the access berm at Basin L/M. Seeds will be broadcast over the tops and slopes of the berm, then disked to a depth of 1-2 inches using a small tractor. When the seeds are being turned under, fresh pickleweed stems will also be included, derived from cuttings from the basins. The seeded areas will not be irrigated. They will be seeded in December 2004, immediately prior to the winter rains. It is anticipated that the above species will become established by natural rainfall during the course of the field experiment, and that a more natural restoration process without the use of irrigation would minimize weed colonization and facilitate establishment of the most suitable mix of species. The seeded areas will be weeded as described in Section 4.4.

The vehicle corridor along the north berm will be seeded in a similar manner. It will be weeded as described in Section 4.4.

4.2 IMPLEMENTATION

The Airport proposes to conduct the field experiment for 2 years, at which time the Airport would present results of the experiment to the FAA for review. Three outcomes are possible based on the nature of the results, as follows:

1. Continuation of the experiment because of the need for more reliable data, or for data from years with different runoff and weather conditions
2. Termination of the experiment because the results indicate that the ecological benefits are not being achieved, and/or increased tidal circulation creates an unacceptable increase in bird strike hazard
3. Continuation of the experiment with approval to proceed with plans to implement a larger tide restoration project at Goleta Slough by the Airport and other interested agencies and parties. The location, size, and timing of a future project are unknown at this time. Possible future projects were identified in the Airport's Feasibility Study. A likely project would be to expand the sizes of the experimental basins in Basins E/F and L/M, and replace the pipe culverts with direct openings in the berms. Under this scenario, the field experiment could continue for several years as the long term project is funded, designed, and subject to environmental review and permitting.

A maintenance and monitoring program will be implemented for the duration of the experiment, Routine maintenance will include the following tasks:

- Inspections of the culvert and slide gate to detect any blockage, sediment build up, or erosion at the inlet or outlet.
- Removal of obstructing vegetation, debris, and sediment from the inlet and outlet of the culverts
- Weeding of the basin, including berms, to reduce non-native weeds and facilitate revegetation of construction disturbed areas with native wetland plants
- Re-planting of the revegetated portions of the berms and basin to increase native plant cover in the event that the initial seeding is not adequate

In addition, the field experiment will be monitored to assess performance (i.e., are the habitat and hydraulic objectives being met) and if creating tidal conditions increases bird strike hazards compared to conditions in non-tidal basins. Specific elements of the monitoring program are listed below, which will be adapted to the field experiment selected.

4.2.1 Hydrology

The objectives of this element of the monitoring program are to: (1) determine if the desired tidal regime has been achieved; (2) identify the relationship between the new hydrologic regime and observed changes in habitat and bird use; and (3) critically evaluate the performance of the hydraulic design of the experiment to provide input on future designs. The following parameters will be monitored prior to, and during, the field experiment:

- Continuous readings of water surface elevation will be taken in the experimental basins, Tecolotito Creek near the experimental basins, and the lagoon at the mouth of Goleta Slough

(four locations) for the duration of the experiment. Data will be used to evaluate the time lag involved in tide changes from the ocean to the basin; range of tide heights in the basin compared to other locations in the slough. In addition, observations will be made of tide flow velocities and possible bank or channel bed erosion in the experimental basin. Depending upon funding, either continuous recording automated tide gauges or staff gauges (to be read manually) will be installed.

- Soil and water salinities will be periodically measured to identify any substantive changes in salinity during the diurnal tide cycle, and between different seasons. Soil and water salinities are expected to respond very rapidly to changes in inflow and outflow patterns of ocean and fresh water. Soil and water salinities will be taken in the experimental basins and in Tecolotito Creek during 6 hour intervals of a diurnal tide cycle four times a year to characterize the changes during a short period of time. Soil and water salinities will also be taken on a monthly basis throughout the year at high and low tides in the experimental basin and in Tecolotito Creek to detect seasonal changes due to the presence or absence of freshwater runoff. Soil and water salinities will also be measured in the control basins.

4.2.2 Vegetation

The objectives of this element of the monitoring plan is to determine how existing plants in the experimental basins respond to a tidal regime; and the extent of plant colonization in the experimental basins, particularly related to elevations. Plant colonization of the newly established mudflats will be monitored, as well as growth rates, development of vegetative cover, and species diversity. Transects to count newly established plants and measure vegetative cover in graded areas of the experimental basins will be established and used for quarterly monitoring surveys. Semi-permanent stakes will be placed and photo-points will be located.

Transects will also be established in the vegetated portions of the experimental basins to measure plant growth (stem length or cover) under the new tidal regime. Sampling plots will be located along the transects and used to count plant establishment (in the new mudflats), species diversity, stem growth, and cover.

Growth rates in the control basins will also be monitored for comparison with the new tidal basins. The results will be evaluated relative to elevation to determine how the frequency and depth of tidal inundation affects plant growth and colonization.

4.2.3 Invertebrates

The objective of this monitoring program element is to determine if increasing tidal circulation enhances the diversity and abundance of benthic invertebrates, which provide food for fish and birds. Invertebrate surveys will be conducted on a quarterly basis to identify benthic macro-invertebrates in the experimental control basins using soil cores placed along an elevation gradient. The diversity and relative abundance of major classes or families of organisms will be evaluated in a laboratory.

4.3 MONITORING BIRD STRIKE HAZARDS & SUSPENSION OF THE EXPERIMENT

To prevent any unanticipated effects on bird strike hazards, the proposed field experiment includes a rigorous bird hazard monitoring program and protocol to immediately suspend, or if necessary, terminate the experiment if adverse conditions were observed. The 2002 feasibility study included the results of a year-long survey of bird activity (March 2001 to February 2002) in and around the airfield to provide baseline data on the types of birds using various habitats, and the amount and type of hazardous bird activities in the airfield. These surveys will be resumed in the summer of 2004 to provide data prior to the construction of the basins in the fall of 2004.

Bird surveys will continue for the duration of the experiment. Field biologists will record bird activity in the experimental and control basins on a weekly basis, recording the following information: (1) types and numbers of birds observed; (2) bird activity (e.g., feeding, resting, flying); and (3) movement to, from, and within the experimental basins. A field biologist will spend several hours at each basin at different times of the day throughout the year. In addition, bi-weekly surveys will be conducted at other tidal and non-tidal basins in Goleta Slough that are not involved in the field experiment in order to provide a broader context for interpreting the data. In order to make observations of the experimental basins, control basins, and airfield, temporary wooden observation structures will be placed at the southwest corner of each experimental basin. These wooden structures will provide sufficient height to observe birds in and near the basins, and will also provide a blind. The structure at Basin E/F will be 3 feet high, while the structure at Basin L/M will be 6 feet high. They will be freestanding, unpainted wooden structures that are custom made for the project.

The key observations related to bird strike hazard would be bird flights to or from the experimental basins that traverse the runway or taxiways, or involve landings on the airfield. Two levels of hazardous activity would be recorded during the weekly surveys:

- Type A Sightings – an individual bird flies over the runway or approach zone (up to 300 feet elevation, the potential strike zone for most aircraft on approach or taking off) or lands on the airfield while traveling to or from an experimental basin;
- Type B Sighting – a bird species characterized as a high hazard species, or a flock of birds flies over the runway or lands on the airfield while clearly traveling to or from an experimental basin. High strike hazard species include waterfowl, gulls, egrets, herons, raptors, and vultures. Flocks are defined as six or more birds. Flocks will be recorded in categories to reflect the number of birds, which could range into the dozens. Flocking birds of concern include crow, starling, and doves.

The number of Type A and B sightings associated with birds from the experimental basins will be statistically compared to the control basins to determine if the new tidal habitats are creating more hazardous bird behavior. The occurrence of the sightings will be classified as follows:

Level 1 Incidents. The number of Type A sightings exceeds those of the control basin, but is less than or equal to those of other basins surveyed.

Level 2 Incidents. The number of Type B sightings exceeds those of the control basin, but is less than or equal to those of other basins surveyed.

Level 3 Incidents. The number of Type A sightings exceeds those of the control basin, and more than half of the other basins surveyed.

Level 4 Incidents. The number of Type B sightings exceeds those of the control basin, and more than half of the other basins surveyed.

Level 5 Incidents. The number of Type A or B sightings exceeds those of the control basin and all of the other basins surveyed.

The bird observations and types of sightings will be analyzed at the end of each weekly bird survey, and the incident level will be calculated and the data summary will be transmitted to Airport staff for review. The number of incidents will be calculated on a weekly basis and used to determine if bird strike hazards associated with the experimental basins have increased and may require action. The basis for determining the level of strike hazard and the action to be taken are summarized below:

- Low Increase in Strike Hazards. Level 1 Incidents occur on six consecutive surveys or Level 2 Incidents occur for three consecutive surveys – consult with FAA and Wildlife Services to discuss the data and level of hazard observed. Initial response would be to increase the frequency of field surveys, but may include temporarily or permanently terminating the experiment.
- Moderate Increase in Strike Hazard. Level 3 Incidents occur for four consecutive surveys or Level 4 Incidents occur for two consecutive surveys – consult with FAA and Wildlife Services to discuss the data, level of hazard observed, and possible actions, including temporarily or permanently terminating the experiment.
- High Increase in Strike Hazard. Level 5 incidents occur for two consecutive surveys – consult with FAA and Wildlife Services to discuss the data, level of hazard observed, and temporarily or permanently terminating the experiment.

The Airport will coordinate with the USDA Wildlife Services throughout the duration of the experiment, providing quarterly updates on the progress of the experiment, and consulting with them when appropriate based on the above criteria. When it is appropriate to consult with FAA and USDA due to an increase in strike hazard, the Airport would contact both agencies by phone and e-mail with the basis for the consultation, information on the increase in strike hazard observed, and the Airport's recommendations for action. This consultation would occur within 24 hours of a documented increase in strike hazard. The Airport requests that both USDA Wildlife Services and FAA provide verbal or written feedback within 24 hours of notification.

The tidal connection to the experimental basins will be controlled by mechanical slide gates on culverts. Hence, if it were necessary to suspend the experiment, tidal exchange in the experimental basins can be shut off within hours by mechanically closing the gates. If it is desired to close the tidal connection while the basin is in a dewatered state, the Airport would wait for the next low tide to evacuate the basin, and then close the gate. Up to 12 hours may be necessary to establish a closed and dewatered basin when relying on natural tide action. If it were necessary to temporarily suspend the field experiment independent of the tide level, the Airport will close the gates and then pump water from the basin using a portable sump pump and generator. Airport staff will be responsible for closing the gates upon instruction by the Airport Director.

If there are unique bird strike hazard problems (such as a group of migrant waterfowl that take up temporary residence in the slough) in an experimental basin that can be controlled by hazing

techniques (e.g., noise, surfactants, decoys, and shotshells), then the Airport would use these methods as interim measures until the bird attractant in the basin has been removed.

4.4 RESTORATION OF THE EXPERIMENTAL BASINS AFTER TERMINATION

If the experiment is permanently terminated, the Airport will restore the experimental basins to their pre-project conditions. The slide gates would be removed and the culverts would be plugged with concrete. The basins would be backfilled with imported clean fill with a soil texture that matches the existing soil conditions. Construction work would follow previous procedures relative to access and work areas. Berms would be removed and the basins will be filled until the basin resembles pre-project grade. It is anticipated that backfilling could require at least 2-3 weeks in order to retain a contractor and suitable material. Once the basin has been filled to pre-construction grade, the Airport would turn under pickleweed stems derived from Goleta Slough using a small tractor. Stems and roots of this abundant plant will sprout vegetatively and create a pickleweed cover that was present prior to the experiment. Berms would be seeded with native shrubs. It is likely that full restoration of the basins with complete pickleweed cover and restored berms would be accomplished within two years.

4.5 REVEGETATION MAINTENANCE AND MONITORING

The Airport will monitor and maintain the seeded areas for the duration of the field experiment. Maintenance activities will include weeding, reseeding, and repair of erosion damage. It is anticipated that maintenance workers would visit the basins on a weekly basis during the growing seasons of the field experiment.

Weeding will be performed on an as needed basis to comply with the performance standards. Weeding will occur at least six times per year, or more frequently, if necessary. Weeding will be performed primarily by hand methods, including hand-held weed whips. Herbicides will be used in situations where manual methods are not effective.

The restoration performance criteria are as follows: (1) Native plant cover must be at least 33 percent at the end of 2 years, and demonstrate evidence of ongoing and future expansion; and (2) Non-native invasive weeds must remain below 15 percent of the total vegetative cover at all times during the experiment. Non-native grasses are not included in this performance criterion.

Formal site inspections to monitor progress towards the performance criteria will be conducted six times a year during the field experiment. Native plant and weed cover will be calculated during each visit to determine if the performance criteria are being met, or likely to be met, at the end of Year 2.

The Airport will prepare annual revegetation status report on the condition of the seeded areas during the field experiment. Annual reports will be completed by December 1st of each year. The annual revegetation monitoring period will be from January through September. The annual reports will contain a quantitative analysis of attainment of performance standards.

In the event that performance criteria are not being met, the Airport will re-seed the affected areas and initiate a new maintenance and monitoring program.

5.0 AREAS AND QUANTITIES

Estimated areas and quantities associated with the proposed field experiment are listed below in Tables 1 and 2, respectively:

TABLE 1
ESTIMATED AREAS

Area of Interest	Acreage		
	Basin E/F	Basin L/M	Total
Total experimental basin area (not including berms)	1.93 (up to 7' elev.)	2.66 (up to 5' elev)	4.59
Total footprint (basin and new berms)	2.44	3.28	5.72
New berms	0.51 (560 LF)	0.62 (740 LF)	1.13
Temporary construction disturbance zone on perimeter of basin, at culvert location, and at ramp into basin	0.50	0.79	1.29
Temporary access road to basin	0.28 (800 LF)	0.05 (150 LF)	0.33

TABLE 2
ESTIMATED QUANTITIES

Item	Quantity (cubic yards)		
	Basin E/F	Basin L/M	Total
Excavation	3,979	8,641	12,620
Fill	353	885	1,238
Net	3,626	7,756	11,382

6.0 CONSTRUCTION

Construction work will occur during the period August 1, 2004 to November 1, 2004 when the soils are dry at the basins, runoff in Tecolotito Creek is generally absent, and bird breeding is absent. The staging area for Basin E/F will be located near the bunker west of the basin. The staging area for Basin L/M will be located on the CDFG property west of the basin, pursuant to a temporary construction easement with the CDFG.

Work hours will be 7 AM – 4 PM, weekdays only. Work can proceed at the basins without interfering with airfield operations. Grading will occur at the basins in sequence rather than at the same time. Typical equipment at the project sites will include an excavator or grade-all, backhoe, loader, and 10-cubic yard haul trucks. The typical daily work crew at a basin will be 3 to 5 workers. The average daily traffic to and from the basins (one way) will be about 10 trips per day. The estimated peak daily truck trips during hauling events will be 30 trucks.

A projected construction phasing is presented below in Table 3. The exact construction phasing and duration of individual tasks will be determined by the construction contractor. In general, a task will be completed at one basin, then at the second basin, before proceeding to the next task.

**TABLE 3
CONSTRUCTION PHASING**

Item	Duration (weeks)
Mobilize	1
Establish vehicle access routes. Remove vegetation and stockpile offsite	1
Excavation and hauling; construct berms	2
Coffer dam and dewatering system installed in Tecolotito Creek and Mesa Road Ditch	1
Install culverts and slide gates	2
Seed berms; turn under pickleweed in basin bottom	2
Clean up	1
Total=	10 or 2.5 months

At this time, a dewatering system is not expected to be required to conduct the grading operations in the experimental basins. During final design in September 2003, the Airport will place several 3-4 foot augers in the basins to determine if the subsoil moisture content would require dewatering or special construction equipment (i.e., low-weight equipment or use of mats) to conduct the grading.

A cofferdam will be installed at the outlet of the proposed culvert in Tecolotito Creek (Sheet 15, Appendix C) to facilitate installation of the culvert. A portable steel frame cofferdam with a fabric barrier will be used. The frames will be lowered into the creek with a small crane, then the fabric will be placed on the outside surface. Water will be pumped from the berm side of the cofferdam to create a dry space. The cofferdam will not block flows in Tecolotito Creek. The void behind the

cofferdam will need to be dewatered on a continuous basis during the culvert installation operations, using a portable gas generator.

A different cofferdam system will be used on Mesa Road Ditch which is much smaller. Two sandbag cofferdams will be manually placed in the ditch on each side of the proposed culvert outlet (Sheet 16, Appendix C). A sump pump will bypass flows from the west. The void behind the cofferdam will be dewatered on a continuous basis during the culvert installation operations, using a portable gas generator.

Silt fences will be placed around the work areas at each basin (Sheets 15 and 16, Appendix C). Post construction erosion on the basin slopes will be managed by the use of erosion control blankets (i.e., coconut fiber mesh), as well as the proposed pickleweed cuttings.

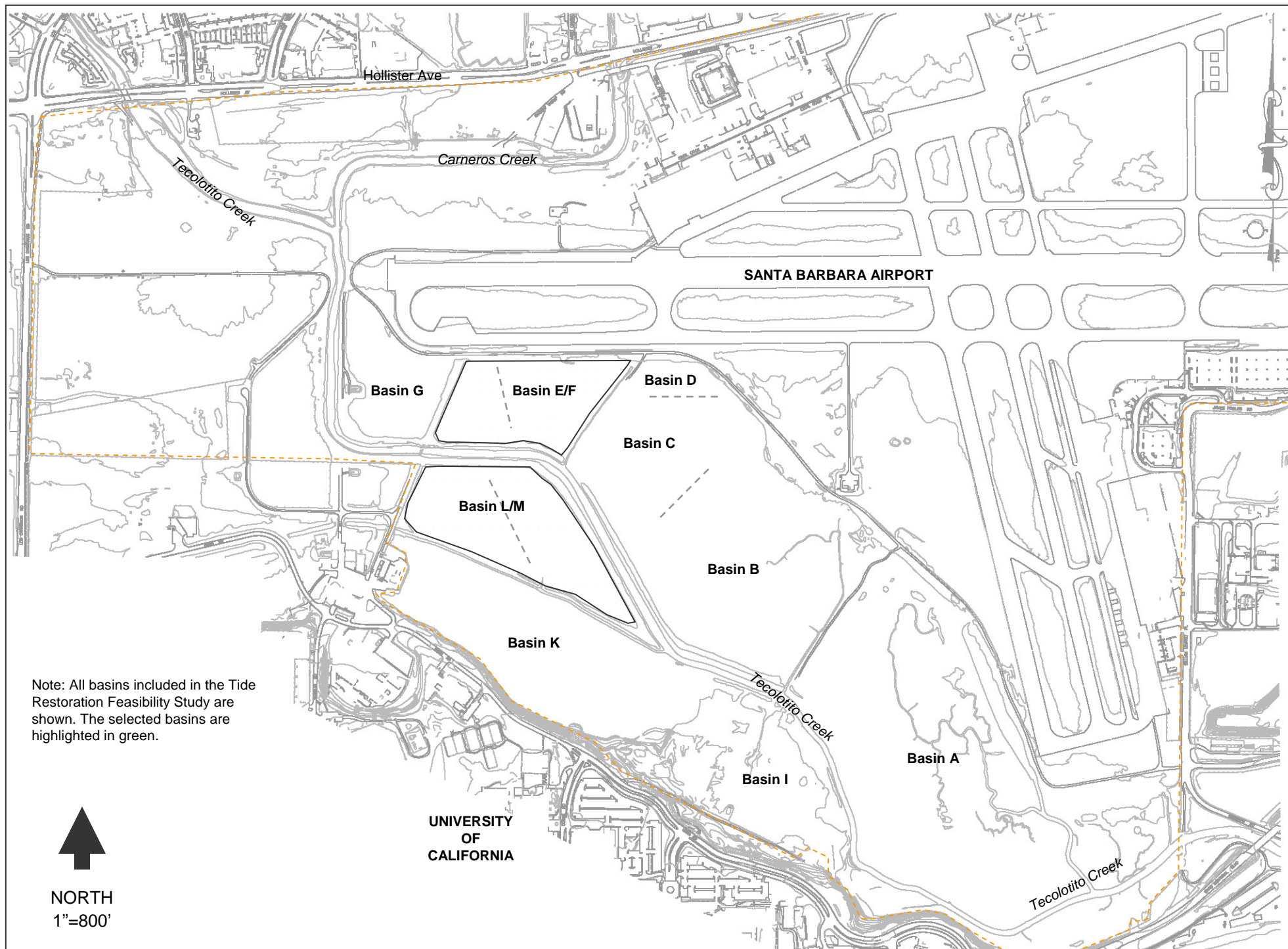


Figure 1. Location of Field Experiment Basins



Figure 2. Existing Conditions at Basin E/F

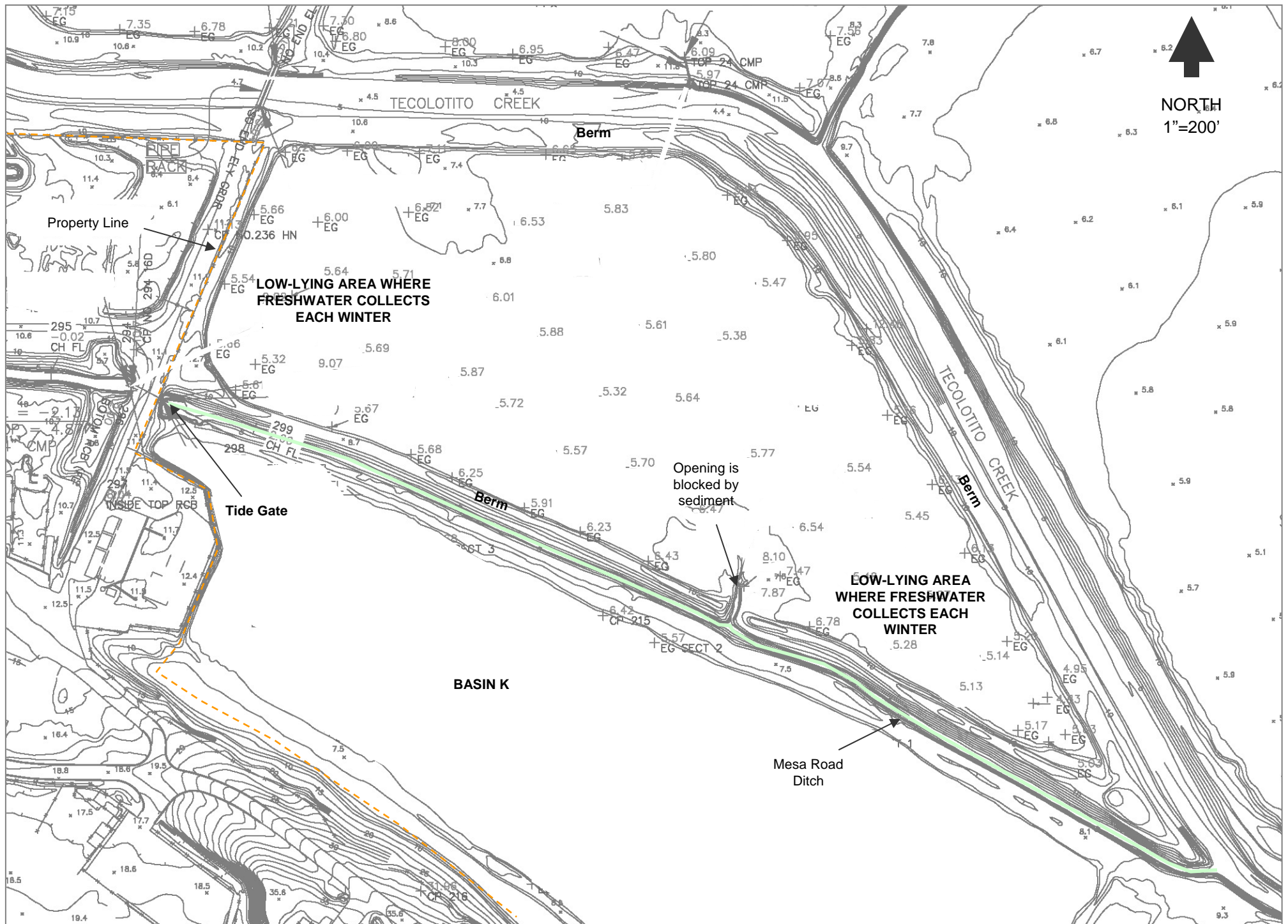


Figure 3. Existing Conditions at Basin L/M



Figure 4. Proposed Experimental Basin E/F

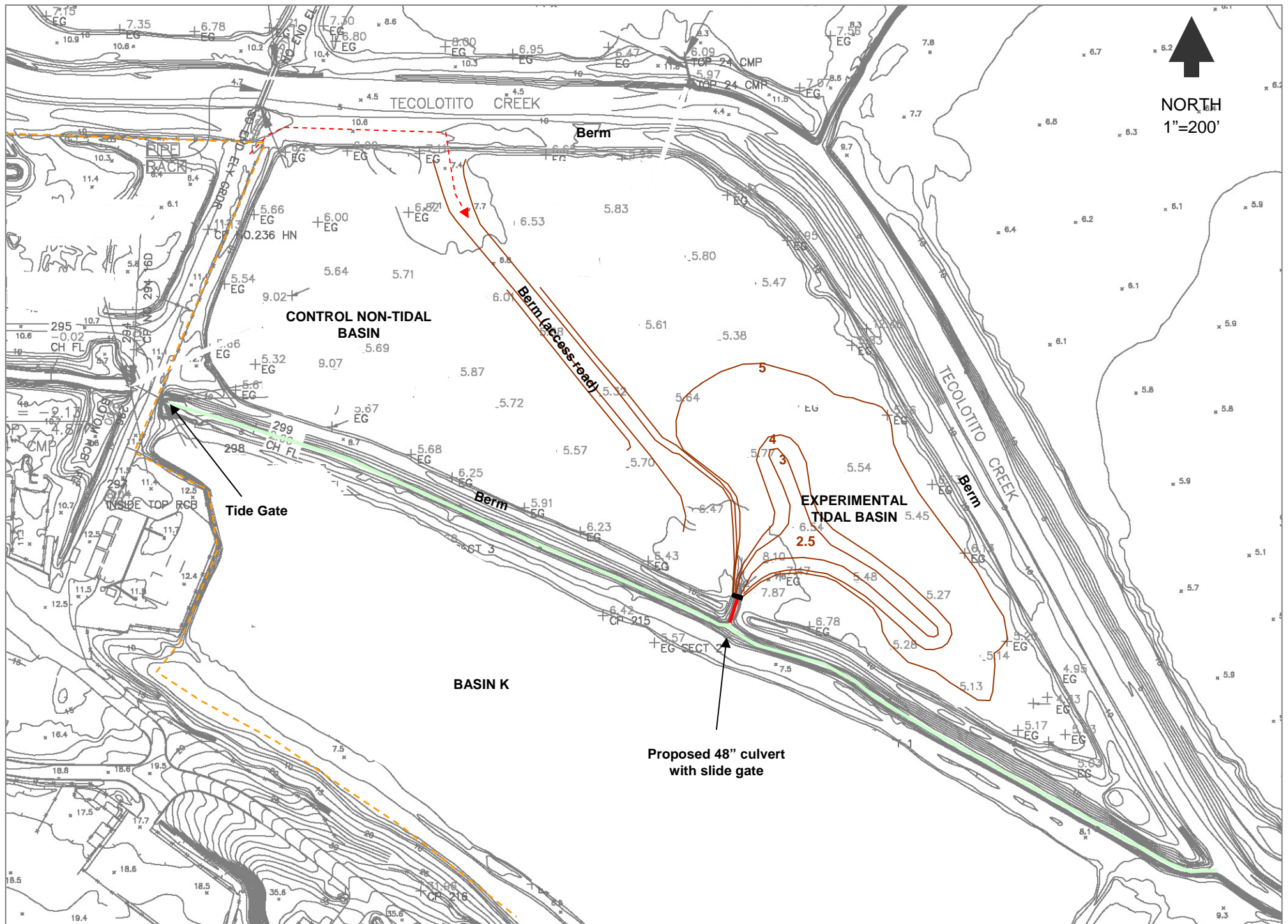


Figure 5. Proposed Experimental Basin L/M

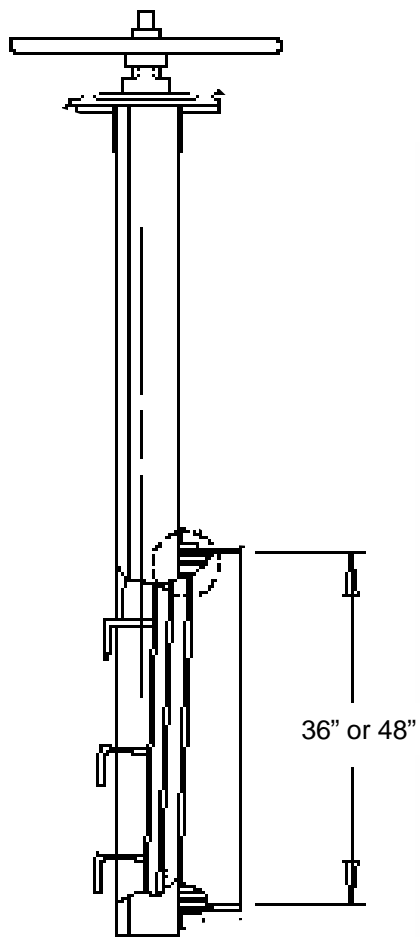


Figure 6. Overview of Slide Gate

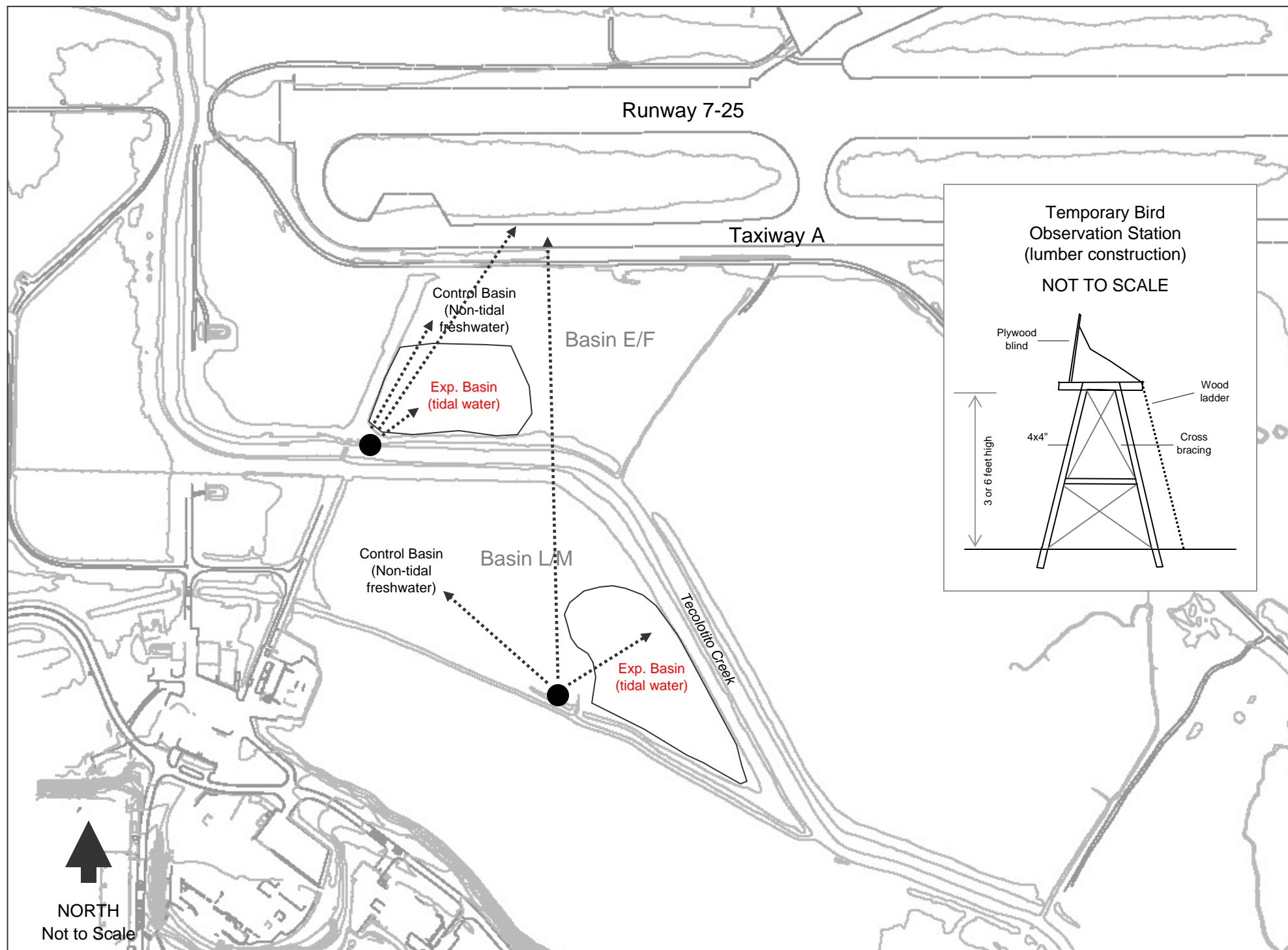


Figure 7. Location of Bird Observation Stations



Photograph No. 1. View of northwest corner of Basin E/F where precipitation and runoff collect. View to the north. March 2003.



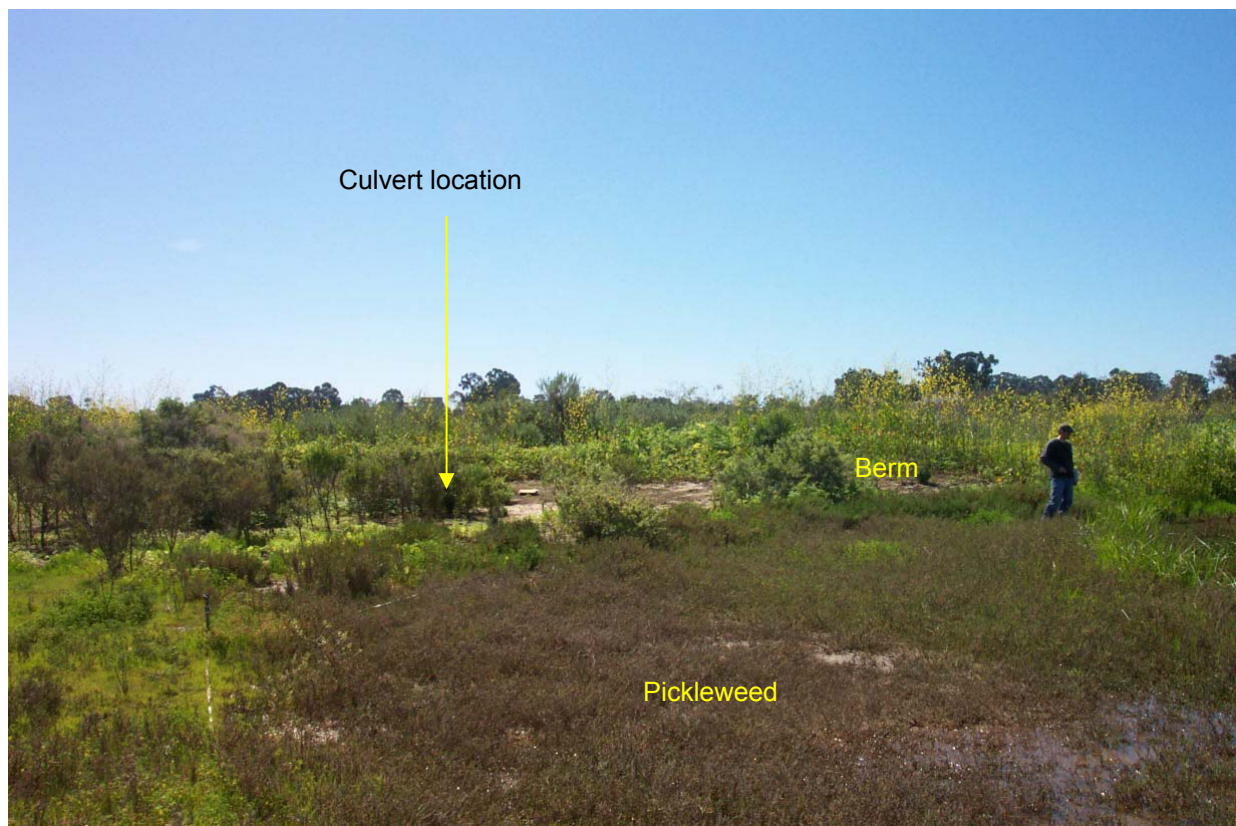
Photograph No. 2. View of southwest corner of Basin E/F where the experimental basin will be installed. View to the southeast. March 2003.



Photograph No. 3. View of the southwest corner of Basin E/F where the experimental basin will be located. View to the west. March 2003.



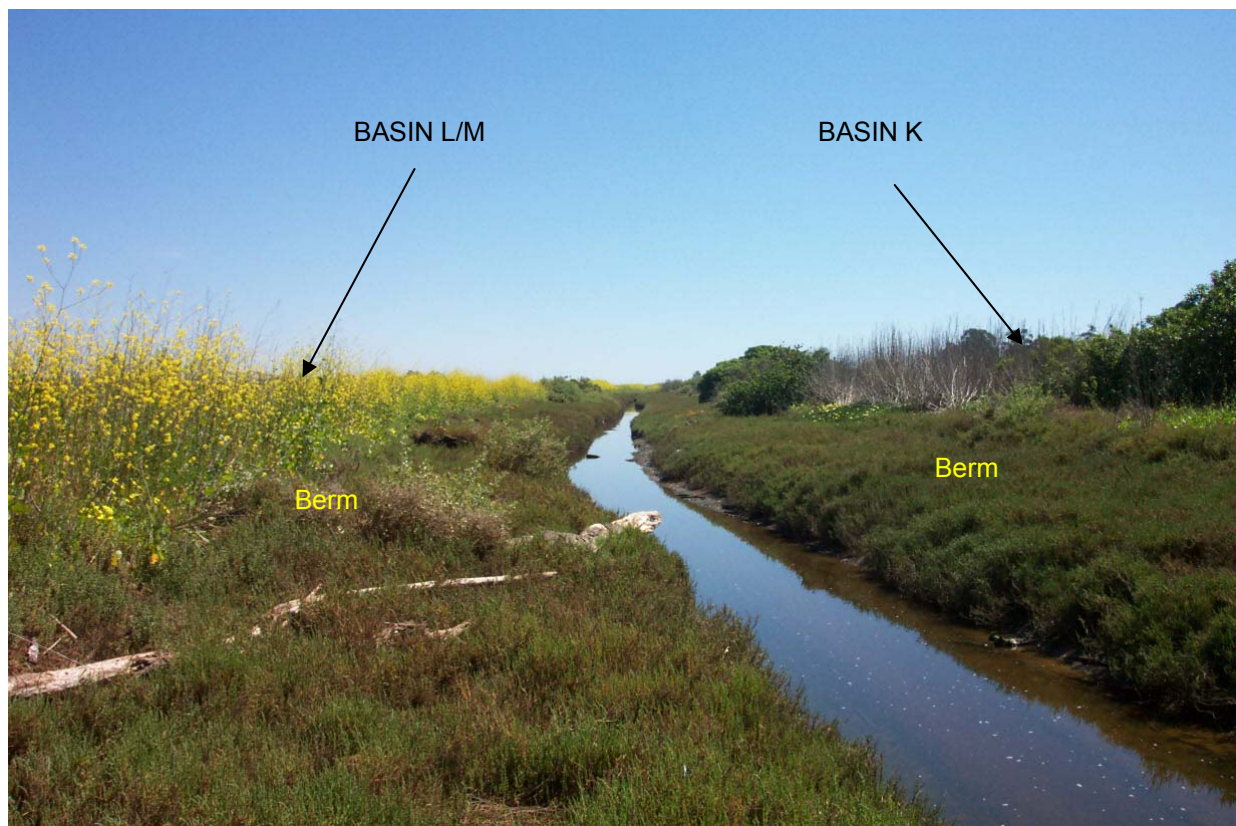
Photograph No. 4. View of the south edge of the proposed experimental basin location. View to the west. Existing block culvert is located in the foreground.



Photograph No. 5. View of the location of the proposed culvert and slide gate at Basin E/F. View to the south.



Photograph No. 6. View of Tecolotito Creek and north bank where the proposed culvert will be located (in the foreground). Creek is at about 4 feet elevation.



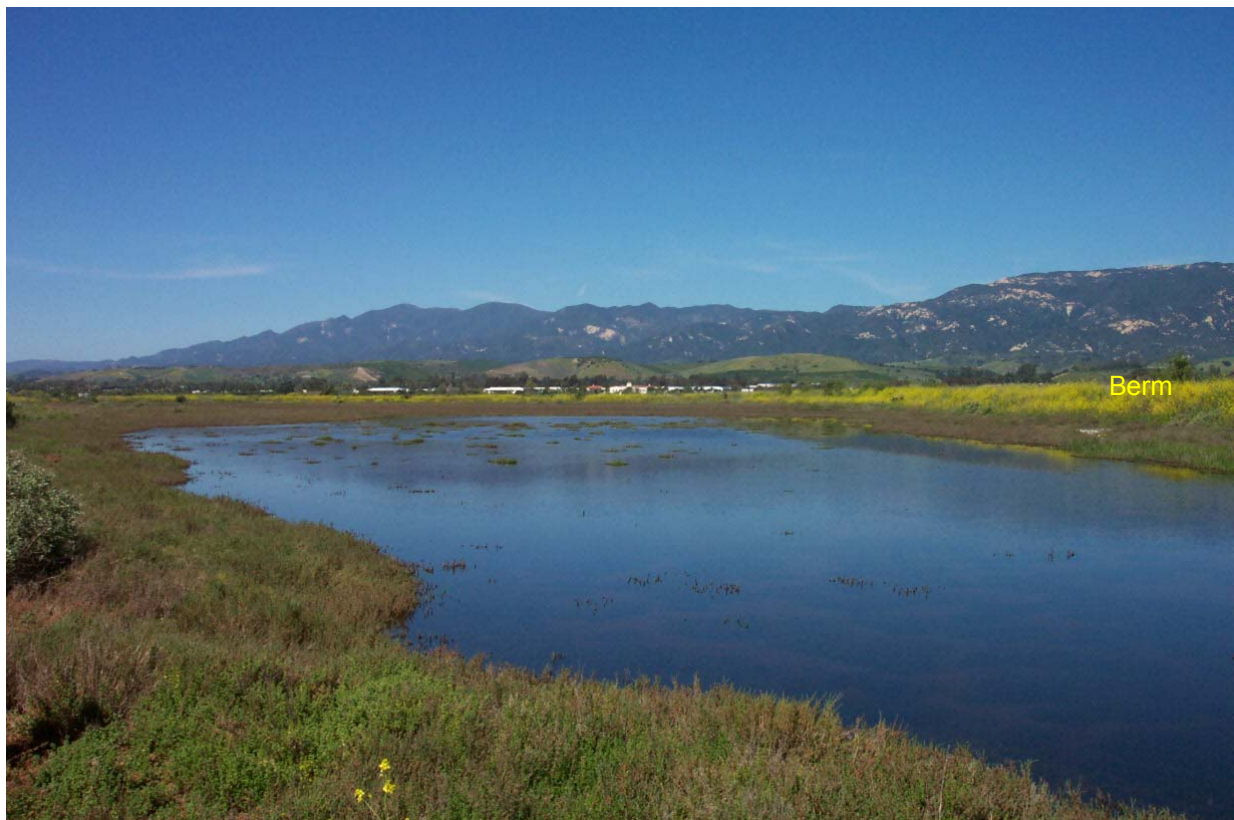
Photograph No. 7. View of Mesa Road Ditch immediately upstream of the tide gate. View to the east.



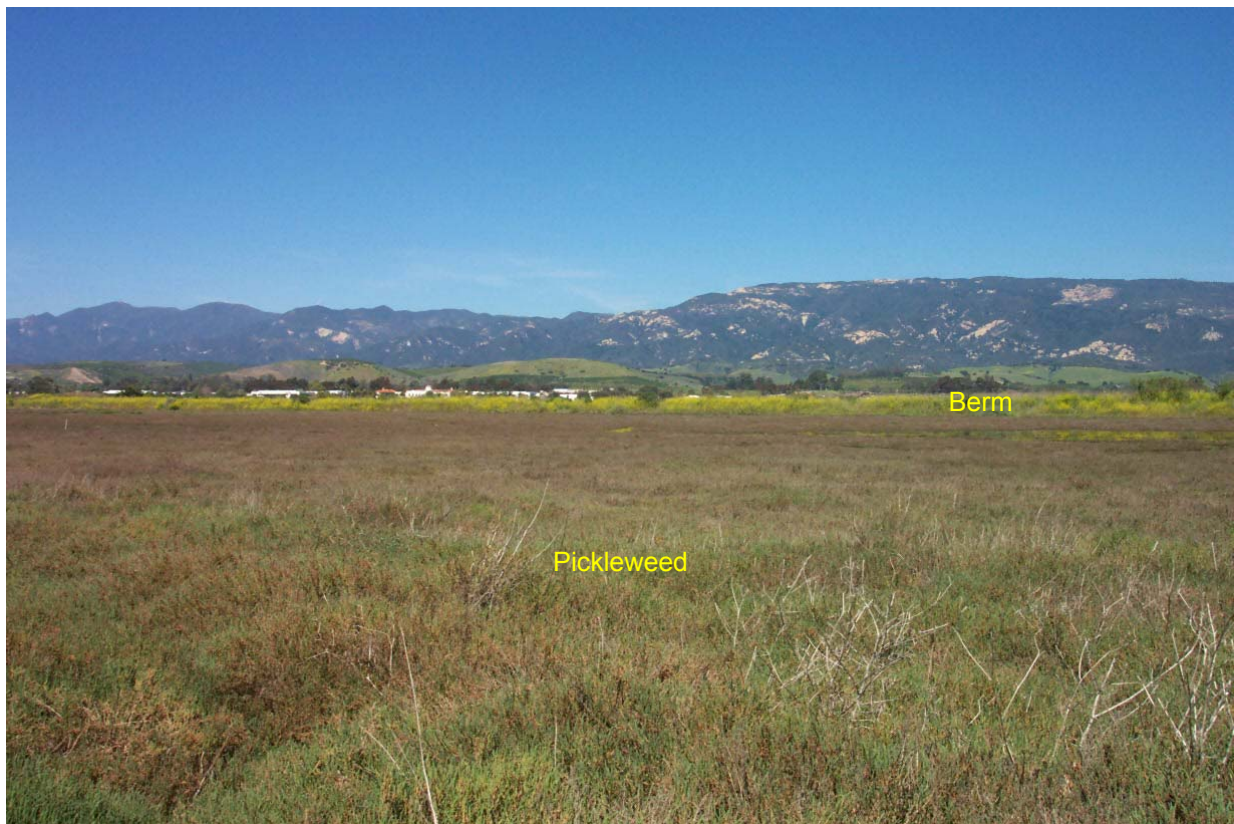
Photograph No. 8. View of the center of Basin L/M. View to the east. March 2003.



Photograph No. 9. View of the location of the experimental basin in Basin L/m. View to the east. This is a low-lying area that collects precipitation in wet years. March 2003.



Photograph No. 10. View of the proposed experimental basin location, which contained water in March 2003. View to the northwest.



Photograph No. 11. View of route of the access road to the experimental basin. View to the north.



Photograph No. 12. View of the control basin located west of the proposed experimental basin. View to the northwest.



Photograph No. 13. View of the existing opening to Mesa Road Ditch. View to the south. The proposed culvert and slide gate will be installed at this location.

EXHIBIT E
COMMENTS AND RESPONSES

DEPARTMENT OF TRANSPORTATION

DIVISION OF AERONAUTICS MS 40

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*Flex your power!
Be energy efficient!*

File : State Clearinghouse
Santa Barbara Airport
Santa Barbara County ALUC

October 24, 2003

Ms. Laurie Owens
City of Santa Barbara
601 Firestone Road
Santa Barbara, CA 93117

Dear Ms. Owens:

Re: *Goleta Slough Tidal Circulation Experiment*
SCH# 2003101079

Thank you for including the California Department of Transportation (Department), Division of Aeronautics in the environmental review process for the above-referenced project. We have reviewed the Initial Study / Mitigated Negative Declaration, dated October 2003, and offer the following comments relative to airport land use compatibility planning.

1. The Santa Barbara Airport is proposing to implement a short-term field experiment in the Goleta Slough to assess the feasibility of a long-term tidal restoration program. The Goleta Slough includes a tidal salt marsh, stream channels, mud and sand flats, and transitional wetland-to-upland and estuarine-to-freshwater habitats. Over 60 percent of the original estuarine wetlands have been eliminated or isolated from tidal action over the past century due to ditching, diking, and filling from agricultural operations, the construction of the Marine Corps Air Station, which later became the Santa Barbara Airport and the University of California at Santa Barbara. The environmental document describes that flood control activities and the gradual accumulation of sediment in the slough have also played a role in the tidal isolation. The Draft Goleta Slough Ecosystem Management Plan recommends the restoration of the tidal circulation to the historic tidal wetlands to revive the natural diversity of resources, habitats, physical processes and functions that have been lost or degraded over time. Consistent with the recommendations of the Draft Goleta Slough Ecological Management Plan, this field experiment would provide a solid scientific foundation for assessing the feasibility of future tidal restoration activities in the Goleta Slough. This experiment would be monitored for at least two years to evaluate the success in establishing the desired tidal habitats, to develop potential site design, implementation, and maintenance strategies for future ecosystem restoration efforts, and to determine the potential effects of habitat changes on aviation bird strike hazards. The Federal Aviation Administration (FAA) and the US Department of Agriculture, Animal and Plant Health Inspection Services (USDA APHIS), Wildlife Services Division have reviewed the proposed experimental design, and both agencies have commented that they have no objections to the proposed experiment.

The proposed field experiment would involve creating two small tidal basins by excavating portions of larger non-tidal basins, and installing culverts that connect to tidal channels. Each experimental basin would be located adjacent to a "control basin" (i.e., an existing non-tidal basin) to allow a comparison of the hydrologic and ecological effects of tidal circulation with existing conditions. This experimental design would also allow a comparative study of bird populations in tidal and non-tidal areas to assess the direct and indirect relationships among tidal flows, bird populations, and incidence of aircraft-bird collisions at the Santa Barbara Airport.

The experimental tidal basins could be restored to pre-project conditions if the results of the experiment are not favorable, such as increased aviation bird strike hazard or failure to establish the desired ecological conditions. The effects on bird strike hazard conditions at the Airport would be monitored during the field experiment to detect any adverse trends. The field experiment includes a contingency plan to immediately terminate the experiment if significant bird strike hazards arise attributable to the field experiment. The proposed experimental tidal basins would be constructed during the period of August through November 2004. The field experiment would end in November 2006, unless it is terminated due to public safety concerns or continued for a longer period of time to collect additional data.

The experimental tidal basins are on airport property along Tecolotito Creek in the southwest quadrant of the airfield.

2. We strongly recommend that the airport management and the City of Santa Barbara coordinate with the Federal Aviation Administration (FAA) to ensure that the proposed activities do not conflict with the fiscal requirements and assurances of the Airport Improvement Program.
3. Depending on the relationship among tidal flows, bird populations at the airport, and the incidence of aircraft-bird collisions, the airport management should consider alerting the users of the airport about the proposed experiment through a Notice to Airmen (NOTAM).
4. Land use practices that attract or sustain wildlife populations on or near airports can significantly increase the potential for wildlife-aircraft collisions. The FAA recommends that land uses that have the potential to attract wildlife be restricted in the vicinity of an airport. For further technical information regarding this environmental management issue, please refer to the FAA's Wildlife Mitigation web page at http://wildlife-mitigation.tc.faa.gov/public_html/index.html. The Sharing the Skies Manual, published in the above-referenced web page, is an excellent resource that links the science behind wildlife management to good public policy for airport land use compatibility planning. Regarding this issue, you may also wish to contact Mr. Patrick L. Smith of USDA APHIS at (916) 979-2675.
5. The planning application for this experiment and its environmental document should be referred to the Santa Barbara Airport Land Use Commission for a consistency determination. The airport management should also ensure that the proposed activities will not directly or indirectly impair any planned airport projects, as indicated in the Airport Layout / Master Plan.

6. The guidance in the FAA's Advisory Circular 150/5370-2E, "Operational Safety on Airports During Construction," should be incorporated into the Mitigation Monitoring and Reporting Program. The environmental analyses should clarify any permanent or temporary (construction-related) impacts on airport imaginary surfaces, as defined by the Federal Aviation Regulation Part 77. The FAA may require the filing of the Form 7460-1, Notice of Proposed Construction and Alteration, for some of project-specific activities. For further technical information, please refer to the FAA's Air Traffic and Airspace Management web page at <http://www1.faa.gov/ats/ata/ATA400/oeaaa.html>.
7. The proposed projects may require amendments to the Airport Layout Plan and a corrected State airport permit. Please coordinate with our Aviation Safety Officer Mr. Kurt Haukohl at (916) 654-5284 for the processing of these forms.

These comments reflect the areas of concern to the Department's Division of Aeronautics. We advise you to contact our District 05 office regarding surface transportation issues.

The need for compatible land uses around airports in California is both a local and a State issue. We strongly feel that the protection of airports from the encroachment of incompatible land uses is vital to the safety of airport operations, to the well being of communities surrounding aviation facilities, and to California's economic future.

We appreciate the opportunity to review and comment on this project. If you have any questions, please call me at (916) 654-5253.

Sincerely,



DAVID COHEN
Associate Environmental Planner

c: State Clearinghouse
Santa Barbara Airport
Santa Barbara County ALUC



October 27, 2003

City of Santa Barbara
Airport Department
ATTN: Laurie Owens, Project Planner
601 Firestone Road
Goleta, CA 93117

RE: Goleta Slough Tidal Circulation Experiment Draft Negative Declaration

Dear Ms. Owens:

The Coastal Conservancy has reviewed the City of Santa Barbara's Draft Negative Declaration for the Goleta Slough Tidal Circulation Experiment project as a responsible agency pursuant to the California Environmental Quality Act. The Conservancy has the following comments:

In section 3.a. (Biological Resources: Endangered, Threatened or Rare Species and Their Habitats), potential impacts to the Belding's savannah sparrow (BSS) are discussed. The draft Negative Declaration proposes that any long-term impacts to BSS habitat would be offset by mitigation which will be performed as part of the Airfield Safety Project. The Airfield Safety Project will create 5.5 acres of pickleweed marsh suitable as nesting habitat for the BSS to mitigate for the loss of 1.3 acres of low-density breeding and foraging habitat for the BSS. The Negative Declaration needs to clarify:

- Does the mitigation for the Airfield Safety Project require creation of the full 5.5 acres? Or is the Airport voluntarily creating pickleweed marsh in excess of what is required as mitigation for this project?
- If the mitigation for the Airfield Safety Project does require creation of 5.5 acres of pickleweed marsh, please explain how this can also be claimed as mitigation for the Tidal Experiment project without double-counting the mitigation.

Thank you for the opportunity to comment on this document.

Sincerely,

Trish Chapman
Project Manager



1330 Broadway, 11th Floor

Oakland, California 94612-2530

510-286-1015 Fax: 510-286-0470

**500 FOWLER ROAD
GOLETA SLOUGH TIDAL CIRCULATION EXPERIMENT
FINAL MITIGATED NEGATIVE DECLARATION
RESPONSE TO COMMENTS**

INTRODUCTION:

Based on the Initial Study that was prepared for the subject project, the Environmental Analyst found that, although the proposed project could potentially have significant adverse impacts pertaining to air quality, biological resources, and water environment, the mitigation measures described in the Initial Study and agreed to by the applicant would reduce potential impacts to less than significant levels. In addition, recommended mitigation measures were identified to reduce less than significant impacts related to hazards, noise, public services, and transportation.

A Draft Mitigated Negative Declaration (DMND) was then prepared. A public review period was held from October 15, 2003 to November 14, 2003. The California Department of Transportation Division of Aeronautics submitted a letter on October 24, 2003. The Coastal Conservancy submitted a letter on October 27, 2003. Responses these comments and to the Planning Commission comments received at the Environmental Hearing on November 13, 2003 on the DMND are provided below.

GENERAL INITIAL STUDY COMMENTS FROM CAL TRANS DIVISION OF AERONAUTICS

Comment:

Cal Trans recommended that the Airport management and the City of Santa Barbara coordinate with the Federal Aviation Administration (FAA) to ensure that the proposed activities do not conflict with the fiscal requirements and assurances of the Airport Improvement Program (AIP).

Response:

The proposed project would not be funded by a Federal AIP grant, but rather through a grant from the Coastal Conservancy. Both the FAA and U.S. Department of Agriculture Animal and Plant Health Inspection Services (USDA-APHIS) have been consulted since the inception for this project. USDA-APHIS and FAA have reviewed the feasibility study for the experiment and the proposed experimental design and has stated that the agency has no objections to its implementation (Attachments 1-3).

Comment:

The Airport management should consider alerting airport users of the experiment through a Notice to Airman (NOTAM).

Response:

FAA Advisory Circular 150/200-28B provides standards for appropriate use of the NOTAM system. The AC specifies that it is the responsibility of the Airport management “to make known any condition on or in the vicinity of the Airport, existing or anticipated, which would prevent, restrict, or present a hazard to arriving or departing aircraft.” Further, the Airport’s Certification Manual requires issuance of a NOTAM when there are “unresolved wildlife hazards in accordance with FAR 139.337.”

The proposed experiment would replace existing freshwater impounded wetlands with tidally influenced wetlands that fill and dewater with the daily tides over a very limited area. No new wetlands would be created under the proposed experiment. The intent of the experiment is to determine whether the change in wetland habitat type would result changes in the type and activity of birds that currently use the area. If the Airport Director, in consultation with the FAA and USDA-APHIS determines that aviation bird strike hazards have increased as a result of the experiment, the experiment would be immediately terminated. Thus, the proposed experiment would not result in a hazard to arriving or departing aircraft or an unresolved wildlife hazard that would necessitate issuance of a NOTAM. Further, the listing for Santa Barbara Airport in Airport/Facility Directory for the Southwest U.S. already identifies the presence of flocks of birds in the vicinity of the Airport due to the presence of Goleta Slough.

Comment:

Airport should refer to technical information on wildlife management available from Federal Aviation Administration (FAA) and contact Patrick L. Smith of USDA-APHIS on wildlife management issues.

Response:

The information cited in the comment letter was used during development of the experimental design. Both FAA and Patrick Smith of USDA-APHIS have reviewed the proposed experimental design and have no objections to the experiment (Attachments 1-3).

Comment:

The proposed experiment should be referred to the Santa Barbara County Airport Land Use Commission for a consistency determination. The Airport should ensure that the proposed project would not impair any projects identified in the Airport Layout Plan

Response:

William Yim of the Santa Barbara County Association of Governments (SBCAG)/Airport Land Use Commission (ALUC) has reviewed the proposed experiment and determined that review by the ALUC for consistency with the Santa Barbara Airport Land Use Plan (ALUP) is not

required. The proposed project would not impair any proposed project identified on the Airport Layout Plan or in the Aviation Facilities Plan.

Comment:

Guidance in the FAA Advisory Circular 150/5370-2E should be incorporated into the Mitigation Monitoring and Reporting Program. The environmental analysis should clarify any permanent or temporary construction-related impacts on airport imaginary surfaces as defined by FAA Regulation Part 77. The FAA may require filing of a Form 7460-1 for some project-specific activities.

Response:

The proposed project would involve excavation of existing basins, culvert installation and construction of viewing platforms less than 10 feet in height. None of these activities would penetrate any of the Airport's imaginary surfaces as defined by FAA Regulation Part 77. The Airport will file a Form 7460-1 with FAA if any of the construction activities necessitate doing so pursuant to Part 77.

Comment:

The projects may require amendments to the Airport Layout Plan and a corrected State airport permit.

Response:

The proposed experiment would not require amendments to the Airport Layout Plan nor would it result in any changes to any of the Airport's physical or operational conditions pursuant to its State airport permit pursuant to CCR Title 21, Division 2.5, Chapter 2, Section 3530(f).

INITIAL STUDY PROJECT DESCRIPTION

Comment:

Planning Commissioner White commented that the grading calculations should be provided in the project description section of the DMND, with a discussion of how the export would be used or removed from the project site.

Response:

The following language has been incorporated into the Initial Study:

Project grading would involve 3,979 cubic yards of cut and 353 cubic yards of fill in Basin E/F and 8,641 cubic yards of cut and 885 cubic yards of fill in Basin L/M for a total of 12,620 cubic yards of cut and 1,220 cubic yards of fill. The exported material would be utilized in one of

three ways: (1) it would be evaluated for its suitability as material for beach replenishment; (2) the Contractor would locate a suitable, permitted development site to accept the fill; or (3) it would be transported to Tajiguas Landfill to be used as clean cover fill.

INITIAL STUDY ITEM 3: Biological Resources

Comment:

Trish Chapman, Project Manager from the Coastal Conservancy requested clarification of the discussion of cumulative impacts to Belding's Savannah Sparrow habitat on Page 14 of the DMND as follows:

- Does the mitigation for the Airfield Safety Project require creation of the full 5.5 acres? Or is the Airport voluntarily creating pickleweed marsh in excess of what is required as mitigation for this project?
- If the mitigation for the Airfield Safety Project does require creation of 5.5 acres of pickleweed marsh, please explain how this can also be claimed as mitigation for the Tidal Experiment project without double-counting the mitigation.

Response:

The discussion on Pages 14-15 of the DND states that the amount of Belding's Savannah Sparrow habitat to be disturbed by the Airfield Safety Projects would be approximately 1.3 acres of low-density pickleweed for breeding and foraging. The Aviation Facilities Plan Final EIR/EIS did not specify a mitigation ratio or requirement to mitigate this impact, but rather assumed that the impact would be fully mitigated to less than significant levels as a result of mitigation requirements for seasonal wetlands impacts.

Thus, the amount of mitigation identified for Area R-2 was in response to a separate, distinct impact identified in the Aviation Facilities Plan Final EIR/EIS, that is, the impact to 13.99 acres of seasonal wetlands. All but 1.3 acres of these wetlands are not suitable as Belding's Savannah Sparrow habitat. The Coastal Commission is requiring 4:1 replacement of these seasonal wetlands. The proposed 5.5 acres of restoration in Area R-2 is just one component of this 4:1 seasonal wetlands mitigation requirement, which totals 32.6 acres.

The 1.3-acre Belding's Savannah Sparrow habitat impact from the Airfield Safety Projects combined with the 2.25-acre impact from the tidal circulation experiment would result in a total cumulative impact of 3.55 acres. With implementation of 5.5 acres of pickleweed marsh restoration in Area R-2 to meet the seasonal wetland requirement, the total amount of pickleweed habitat suitable for nesting will increase by approximately 1.7 acres from existing conditions. Further, the restored Area R-2 would provide higher quality habitat than currently exists in the areas to be disturbed.

500 James Fowler Mitigated Negative Declaration

Response to Comments

Page 5 of 5 December 2003

Clarifying language has been incorporated into the discussion on page 15 of the Initial Study. With incorporation of Mitigation Measures BIO-1 and BIO-2, the DND concluded that impacts to Belding's Savannah Sparrow would be less than significant.

Attachments:

1. Letter from Charles McCormick, Airport Program Engineer, FAA dated June 26, 2003
2. Letter from Kevin Flynn, Supervisor, Standards Section, FAA dated October 2, 2002
3. Letter from Patrick L. Smith, Staff Wildlife Biologist, USDA-APHIS dated September 11, 2002



U.S Department
of Transportation

Federal Aviation
Administration

Western-Pacific Region
Airports Division

Federal Aviation Administration
P.O. Box 92007
Los Angeles, CA 90009-2007

June 26, 2003

Karen Ramsdell
Airport Director
Santa Barbara Municipal Airport
601 Firestone Blvd.
Goleta, CA 93117

Dear Ms. Ramsdell:

This letter is to acknowledge receipt of your letter dated May 7, 2003, regarding the Tidal Circulation Field Experiment at Santa Barbara Municipal Airport. We have completed our review of the Tidal Circulation Field Experiment as described in your letter. Based on our review and the information available, we do not object to your plan to proceed to the next phase of the field experiment.

If you have any questions, please do not hesitate to contact me at 310-725-3626.

Sincerely,

Charles S. McCormick
Airports Program Engineer

Ruben Cabalbag
Supervisor, Standards Section

RECEIVED

JUN 30 2003

CITY OF SANTA BARBARA
AIRPORT DEPARTMENT

Attachment 1



U.S. Department
of Transportation

Federal Aviation
Administration

OCT -2 2002

Karen Ramsdell
Airport Director
Santa Barbara Municipal Airport
601 Firestone Blvd.
Goleta, CA 93117

Western-Pacific Region
Airports Division

P.O. Box 92007
Los Angeles, CA 90009

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RECEIVED

OCT 7 2002

City of Santa Barbara
Airport Department

Dear Ms. Ramsdell,

We have completed our review of the Preliminary Draft Report, Goleta Slough Tidal Restoration Study, Phase I - Feasibility Study for Field Experiment (Draft Study). Based on our review and the information available, we do not object to your plan to proceed to the next phase of the field experiment once the following concerns are addressed:

a. A detailed process for terminating the field experiment must be provided to the FAA for concurrence prior to initiating physical implementation of the project. The procedure shall be a signed commitment on behalf of the city as to the feasibility and responsibility to terminate the experiment in a timely manner if it is determined to have adverse impacts on airfield safety.

The plan should include, but not be limited to:

- What process, criteria and interval will be used to evaluate the experiment to determine if there are any negative impacts to aviation safety caused or exacerbated by the project? Who will be responsible for/included in the evaluation process and how will the determination be made?

- If a determination is made that there are adverse impacts caused or exacerbated by the experiment, what are the procedures to terminate and restore the area? How long will it take from the time the determination is made? How will the hazard be addressed or to what state will the area be restored?

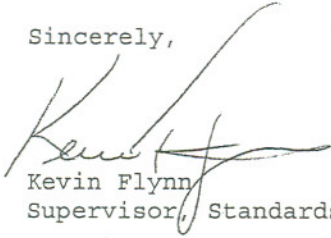
b. The transmittal of the Final Report to our office should clearly state what the city is proposing and why the city believes the project is prudent and justified. Finally, please include an estimated schedule for implementation.

c. We recommend that the city conduct a new wildlife hazard assessment followed by an update to the Wildlife Hazard Management Plan. Please provide a timeframe for accomplishing these tasks.

Attachment 2

Please address the aforementioned issues and submit the final Phase I Report at your earliest convenience. If you have any questions, please call me at (310) 725-3632.

Sincerely,

A handwritten signature in dark ink, appearing to read "Kevin Flynn", with a long, sweeping horizontal stroke extending to the right.

Kevin Flynn
Supervisor, Standards Section



United States
Department of
Agriculture

Animal and
Plant Health
Inspection
Service

Wildlife
Services

P.O. Box 255348
Sacramento, CA 95865-5348

September 11, 2002

Mr. Kevin Flynn, AWP-623
FAA Western Pacific Region
P.O. Box 29007, WPC
Los Angeles, CA 90009

Mr. Flynn:

This letter is regarding the Santa Barbara Municipal Airport's "Goleta Slough Tidal Restoration Study, Phase I - Feasibility Study for Field Experiment".

After reviewing the above mentioned document, I solicited the advice and expertise from Dr. Richard Dolbeer, who is the National Airports Coordinator for the United States Department of Agriculture, Wildlife Services (USDA-WS) Program. Dr. Dolbeer has many years of experience as a Research Biologist studying wildlife damage issues, especially those relating to wildlife/aircraft collisions. Dr. Dolbeer and I visited the airport on August 15, 2002 and are in concurrence that the study design is acceptable and should provide useful information regarding the wildlife hazard issues on and around the Santa Barbara Municipal Airport.

Given the seriousness of the wildlife hazards at airports and the consequences thereof, WS believes that the key point that should be strictly adhered to is the monitoring of the experiment and the termination procedures that are identified in the study protocol, in the event that wildlife hazards increase as a result of the experiment. I have enclosed Dr. Dolbeer's memo and recommendations regarding our site visit in August to the Santa Barbara Municipal Airport. If you need any additional information or would like to discuss this matter further, please feel free to call me at (916) 979-2675.

Sincerely,

Patrick L. Smith,
Staff Wildlife Biologist

Enclosure

cc: John Ledbetter, Santa Barbara Municipal Airport



APHIS—Protecting American Agriculture
An Equal Opportunity Employer

Attachment 3



United States
Department of
Agriculture

Animal and
Plant Health
Inspection
Service

Wildlife Services

6100 Columbus Avenue
Sandusky, Ohio 44870
419-625-0242
419-625-8465 fax
Richard.a.Dolbeer@usda.gov

21 August 2002

To: Patrick Smith, Staff Wildlife Biologist,
USDA/APHIS/Wildlife Services, California

Subject: Goleta Slough Tidal Restoration Experiment and bird hazards at Santa Barbara Airport

This memo regards the issue of restoring natural tidal flow to wetland areas adjacent to Santa Barbara Airport. After reading the Draft report "Goleta Slough Tidal Restoration Study, Phase I—Feasibility study for field experiment" and having a 2-hour site visit to the Santa Barbara Airport with John Ledbetter and you on 15 August 2002, I make the following recommendations:

1. The Tidal Flow experiment should proceed in areas "E, F and G" and areas "L and M" as described in the report. This experimental design has deficiencies in that there is no replication of treatments (i.e., only one treatment and control area for each of the 2 tidal-flow regimes) and the treatment and control sites are not of the same size. Yet, it appears to be the best design that can be laid out given the physical constraints of habitat available. In spite of the limitations, I believe it will provide a good assessment, over the course of 2-3 years, of whether or not these tidal flow regimes increase numbers of hazardous birds at the airport. My recommendation to proceed is also based on the fact that baseline data already collected during 2001-2002 indicates fewer birds in the large area already subjected to tidal flow (Area A) than in areas that have been blocked from tidal flow. Furthermore, the experimental protocol, clearly acknowledging the seriousness of bird hazards at airports, incorporates monitoring and termination procedures if bird hazards develop as a result of the experiment.
2. The airport needs to review and update their Wildlife Hazard Management Plan and the implementation of the plan. This review might be preceded by a new wildlife hazard assessment to clearly identify the source and nature of the various problems (the baseline data collected in regard to the tidal flow experiments already provides a lot of useful information). In the short visit that I made to the airport, I saw numerous hazardous birds on the airport that were unrelated to the tidal flow issue. These included 2 each red-tailed hawks and turkey vultures soaring, a flock of 50 pigeons feeding in infield area, 4 black-shouldered kites, 15 mallards flying over runway threshold, 2 kestrels, 6 killdeer, and numerous crows and cliff swallows. There is an obvious attractive food base for birds on the airport because numerous sign of small mammals (burrows) was observed. Although no gulls were seen on the airport, gulls were present at the nearby beach park (including gulls feeding in open dumpster) where the tidal estuary empties into the ocean. At least 25 great egrets and 3 great blue herons were seen within ½ mile of airport.

Improvement is also needed in identifying species struck on the airport. I noted in the strike data that several "cranes" had been reported as struck. These were likely either great blue herons or great egrets. It is critical that these hazardous species be correctly identified, especially since they are associated with wetlands. We cannot solve a problem or properly evaluate the proposed experimentation if species are not properly identified.

I appreciate John Ledbetter and his staff (Lori and Sarah) giving us an after-hours briefing and tour of the airport and experimental area.

Richard A. Dolbeer, PhD
USDA/Wildlife Services
National Airports Coordinator
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Sandusky, OH 44870 USA
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419-625-0242
419-625-8465 fax